SLV-R5UC
RMT-V5A

SERVICE MANUAL

US Model
Canadian Model

- **Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT II for MECHANICAL ADJUSTMENTS. (9-972-816-11)**

SVHS Hi-Fi

- **Block Diagram and Electrical Adjustment have publish on Supplement in the future.**

SPECIFICATIONS

System

Video recording system	Rotary two-head helical scanning FM system
Audio recording system	Rotary two-head hi-fi system (Recording on the conventional audio track is monaural)
Video signal	EIA standard, NTSC color
Tape speed	SP: 33.35mm/sec. (1 1/4 inches/sec.) EP: 11.11mm/sec. (3/8 inch/sec.) LP: 16.67mm/sec. (11/16 inch/sec.) (playback only)
Maximum recording/playback time	8 hours (EP) (T-160)
Fast-forward and rewind time	Approx. 4 min. (T-120)
HIGH SPEED REWIND time	Approx. 2 min. 30 sec. (T-120)
Audio frequency response	20 Hz — 20 kHz
Dynamic range	More than 90 dB
Wow and flutter	Less than 0.005%

Tuner section

Tuner system (audio)	Split inter carrier system
Channel coverage	VHF channels 2 to 13 UHF channels 14 to 69 CATV channels A-8 to A-1 A to W, W+1 to W+84
Antenna	75 ohm antenna terminal for VHF/UHF

INPUT and OUTPUT

LINE IN 1 and 2	S VIDEO IN (4-pin mini DIN) (1 each) Y: 1 Vp-p 75 ohms (unbalanced), sync. negative C: 0.286 Vp-p (color burst) 75 ohms (unbalanced) VIDEO IN (phono jack) (1 each) input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO IN (phono jack) (2 each) Input level: −7.5 dBs (0 dBs= 0.775 Vrms) Input impedance: more than 47 kilohms
LINE OUT	S VIDEO OUT (4-pin mini DIN) (1) Y: 1 Vp-p 75 ohms (unbalanced), sync. negative C: 0.286 Vp-p (color burst) 75 ohms (unbalanced) VIDEO OUT (phono jack) (1) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO OUT (phono jack) (2) Standard output: −7.5 dBs at load impedance 47 kilohms Output impedance :less than 10 kilohms

— continued on next page —

MICROFILM

VIDEO CASSETTE RECORDER

SONY®

MONITOR OUT	S VIDEO OUT (4-pin mini DIN) (1) Y: 1 Vp-p 75 ohms (unbalanced), sync. negative C: 0.286 Vp-p (color burst) 75 ohms (unbalanced) VIDEO OUT (phono jack) (1) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO OUT (phono jack) (2) Standard output: −7.5 dBs at load impedance 47 kilohms Output impedance: less than 10 kilohms
CONTROL S IN	Minijack (1)
CONTROL S OUT	Minijack (1)
CONTROL L	5-pin DIN connector (1)
HEADPHONES jack	Stereo minijack (1) Output impedance: more than 8 ohms Output level: 45 mW at load impedance 8 ohms

Timer section

Clock	Quartz locked
Time indication	12-hour cycle
Timer setting	Only for recording 8 programs over one month at max.
Power back up	Built-in self-charging battery Back-up duration: Up to approx. 3 hours at one time

General

Power requirements	120V AC, 60 Hz
Power consumption	42 W
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	−20°C to 60°C (−4°F to 140°F)
Dimensions	466 × 100 × 394 mm (w/h/d) (18 3/8 × 4 × 15 5/8 inches)
Weight	Approx. 8.5 kg (18 lbs 12 oz)

Wireless Commander RMT-V5A

Remote control system	Infrared control
Command mode	VTR1/VTR2/VTR3 selectable
Power requirements	3V DC, 2 size AA batteries (IEC designation R6)
Dimensions	75 × 45 × 235.5 mm (w/h/d) (3 × 1 13/16 × 9 5/16 inches)
Weight	Approx. 240 g (8 1/2 oz) (excluding batteries)

Accessories supplied

Wireless commander RMT-V5A with two size AA batteries (IEC designation R6)	(1)
75-ohm coaxial cable with F-type connectors	(1)
Audio/video connecting cable (3 phono to 3 phono)	(1)
S video connecting cable (4-pin mini DIN to 4-pin mini DIN)	(1)
External antenna connector	(1)

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

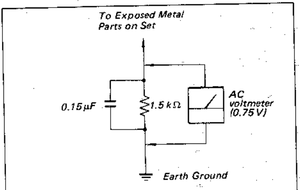


Fig. A. Using an AC voltmeter to check AC leakage.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

TABLE OF CONTENTS

Section *Title* *Page*

1. SERVICE NOTE
1-1. Returning the Pinch Roller, Guide Roller and Elevator CAM to a Stop State 5
1-2. Housing the Tape in the Cassette Half 5
1-3. Removing the Cassette when the Equipment Malfunctions with a Cassette Inserted 5
1-4. Removing the Upper Drum 6
1-5. Attaching the Upper Drum 6

2. GENERAL
Introduction 7
Identifying the Operational Parts 7
Connections 12
Adjusting a TV 16
Menu System 17
Mode Setting 18
Date and Clock Setting 19
Presetting Active Channels 20
Handling Video Cassettes 21
Playing a Tape 22
Recording TV Programs 27
Use of the Tape Counter 30
Timer Recording 31
Quick Timer Recording 35
Index Function 36
Audio Recording 37
Editing the Entire Tape Contents to Another Tape 38
Synchronized Editing 39
Manual Assemble Editing 42
Insert Editing 43
Indicators in the Display Window 45
MENU Displays 46

3. DISASSEMBLY
3-1. Removal of Upper Cover and Front Panel 47
3-2. Removal of Door Block 47
3-3. Removal of Control Switch Block 47
3-4. Opening the MA-62 Board 48
3-5. Removal of MF-94 Board and I/O Terminal Board Block 48
3-6. Removal of TU-120 Board, HF-9 Board and CG-10 Board 48
3-7. Removal of DG Block 49
3-8. Removal of FL Cassette Compartment 49
3-9. Removal of Mechanism Deck and MF-92 Board 50
3-10. Removal of VI-94 Board, YC Block and Switching Block 50
3-11. Internal Views 51

4. DIAGRAM
4-1. Circuit Boards Location 52

5. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS
5-1. Frame Schematic Diagram 53
5-2. Printed Wiring Boards and Schematic Diagrams 56
- CG-10, PI-20 and RP-76 Boards 58
- YC-92 Board 67
- YC-93 Board 75
- LR-10 and VI-94 Boards 83
- DQ-4, MA-62 and SI-10 Boards 92
- DG-10 and DI-42 Boards 101
- JS-20, LD-34, MF-94, MF-101, RM-43, TK-12 and TK-13 Boards 110
- MD-49 Board 119
- HF-9 Board 125
- TU-120 Board 129

5-3. Semiconductors 133

6. EXPLODED VIEWS
6-1. Front Panel and Cabinet Assemblies 135
6-2. Switching Block Assembly 136
6-3. Main Boards Assemblies 137
6-4. FL Block Assembly 138
6-5. MD Block Assembly (1) 139
6-6. MD Block Assembly (2) 140
6-7. MD Block Assembly (3) 141

7. ELECTRICAL PARTS LIST 142
HARDWARE LIST 170

SECTION 1
SERVICE NOTE

1-1. RETURNING THE *PINCH* ROLLER, GUIDE ROLLER AND ELEVATOR CAM TO A STOP STATE

① Remove the bottom plate.

② The cam motor is on the bottom side of the MD (between the front panel and the MD-49 board). Turn the worm gear 🅐 on the MD in the direction shown by arrow 🅑.

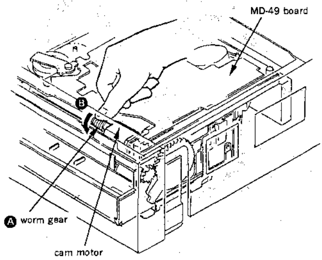

MD-49 board
🅑
🅐 worm gear
cam motor

Fig. 1-1

1-3. REMOVING THE CASSETTE WHEN THE EQUIPMENT MALFUNCTIONS WITH A CASSETTE INSERTED

① Remove the upper case.

② Turn the worm gear 🅐 of the FL cassette compartment motor in the direction shown by arrow 🅑.

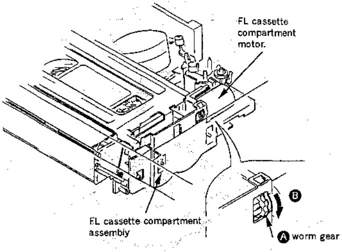

FL cassette compartment motor.
FL cassette compartment assembly
🅑
🅐 worm gear

Fig. 1-3

1-2. *HOUSING THE TAPE IN THE CASSETTE HALF*

Use your finger to turn the flywheel 🅐 on the capstan motor in the direction of arrow 🅑. The tape will be housed in the cassette half.

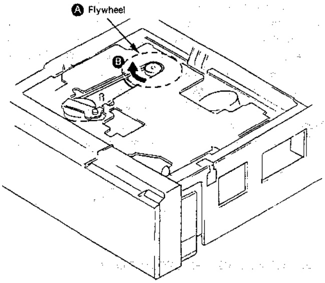


Fig. 1-2

Caution

When carrying out steps 1-1 to 1-3, be careful that the slack in the tape does not catch and that the tape is not damaged.

Replacing The Upper Drum

1-4. REMOVING THE UPPER DRUM

① Refer to Fig. 1-4 to remove the screw ❶ (P3×5) and then remove the axle ground.

② Completely remove the revolving upper drum PC board and the solder at sixteen points as shown by the arrows.

③ Refer to Fig. 1-5 to remove the two screws ❸ (PSW3×8) and remove the revolving upper drum in the direction shown by arrow 🅐. If the drum proves difficult to remove, try tilting slightly backward and left and right.

Note : When the drum cannot be removed, check again to ingure that all solder has been removed.

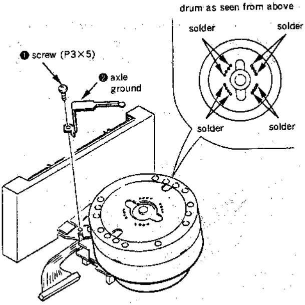


Fig. 1-4

1-5. ATTACHING THE UPPER DRUM

① When inserting the revolving drum in the lower drum, be very careful not to leave fingerprints or other soiling on the contact surface.

② Refer to Fig. 1-5 and make sure SP1 on the revolving upper drum PC board is aligned in the same direction as S1 on the rotor transformer PC board (lower drum side). Attach so that the holes on the upper and lower drums are aligned with each other.

③ If it proves difficult to attach the drum, attach while moving the drum slightly backward and foward and left and right.

Caution : Be careful not to damage the head at this time. Also make sure that the drum is securely inserted and not rattling.

④ Refer to Fig. 1-5 to tighten the two screws ❸ (PSW3×8).

Caution : Lightly tighten one of the screws and then the other screw and check to see that there is no rattling before tightening the screws completely.

⑤ Solder the sixteen locations on the PC board from the revolving drum.

⑥ Tighten screw ❶ (P3×5) so that the protruding portion on the end of axle ground ❷ is in contact with the center of the drum axle.

Caution : When attaching the axle ground ❷ be careful not to apply pressure to the spring section of the axle ground.

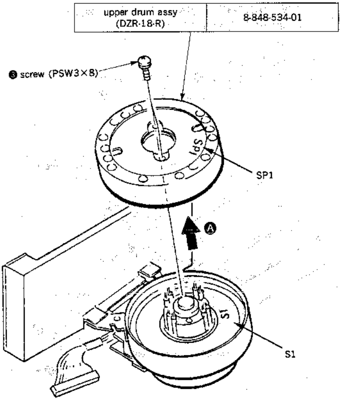


Fig. 1-5

SECTION 2
GENERAL

This section is extracted from instruction manual.

Introduction

How to Use This Manual

This manual is arranged to help you quickly find the information you need for the operation of the SLV-R5UC. This manual consists of the following 4 sections.

1 Preliminaries

2 Preparation

3 Operation

4 Other Information

First, look through the Table of Contents.
If you are already familiar with VCR operation, read starting from the "Preparation" section. If you are new to VCR operation, start with "Identifying the Operational Parts" to familiarize yourself with this VCR. To have a quick overview of the operation of this VCR, refer to "Playing a Tape" (page 36), "Recording TV Programs" (page 45), and "Timer Recording" (page 54).

About the S-VHS System

The S-VHS system provides sharp, finely detailed pictures* through the S-VHS video signal recording/playback circuit and high quality S-VHS tape.
*Approximately 400 TV lines of horizontal resolution

This VCR can record and play back high quality pictures when the tapes bearing the S-VHS mark are used. The unit also can record and play back the pictures when tapes with the VHS mark are used.

On the recording/playback format and the types of video cassettes to be used

Before you begin, check to see which recording/playback format (S-VHS or VHS) you will use, referring to the following table.

	Tape used	Recording/playback format		
During recording	S-VHS tape	Setting of S-VHS switch	➡	"ON" → S-VHS "OFF" → VHS
	VHS tape	VHS format regardless of the S-VHS switch setting		
During playback	Tape recorded in S-VHS format	Playing back on the S-VHS VCR	➡	**Automatically selected** The tape recorded in the S-VHS format will be played back in the S-VHS format. The tape recorded in the VHS format will be played back in the VHS format.
		Playing back on the VHS VCR	➡	**The tape recorded in the S-VHS format cannot be played back.** The tape recorded in the VHS format will be played back in the VHS format.
	Tape recorded in VHS format	VHS format		

About Recording and Playback with this VCR

On recording and playback format
- This VCR bears the S-VHS mark.
- The VCRs bearing the S-VHS mark have been developed while using high resolution and high-quality picture technology which meet the existing VHS standards.
- If you record TV programs with this VCR, the recorded pictures will be played back giving the horizontal resolution level of the TV.

On the cassettes used
- Use video cassettes bearing the S-VHS mark or the VHS mark.
- The video cassettes recorded in the VHS format can be played back on this VCR.
- The video cassettes recorded in the S-VHS format using this VCR cannot be played back on a VCR with the VHS mark only.
- Some video sources used in other countries cannot be played back on this VCR due to the differences in color systems.

> The S-VHS mark was replaced by the new S-VHS mark.
> The products bearing the new S-VHS mark are compatible with any products bearing the old S-VHS mark. You can use them in the same way as before.
> SUPER VHS is the name for S-VHS (or S-VHS). Its FM frequency band is 5.4 MHz — 7 MHz, which is wider than the regular VHS format.

Overview of the SLV-R5UC

Tape editing

S video input connector and video/audio input jacks on front panel
Offer easy connection to another VCR.

Flying erase head
Allows smooth transition between two recorders.

Synchronized editing
Allows you to control this VCR and the connected VCR simultaneously. You can use this VCR as the recorder and the player for editing.

Edit monitor function
Allows easier editing by displaying both the edit source picture and the picture to be edited on the TV screen simultaneously.

Control S input/output jacks and control L jack
Enables you to remotely control the tape transport of other Sony video equipment.

On-screen display

AUTO MENU
Displayed to set the VCR to the desired automatic tape operation.

AUTO REPEAT
Allows to play back the desired portion of the tape repeatedly.

P in P (picture in picture) function
Allows watching a small TV picture inset in the VCR playback picture and vice versa.

Data screen
Displays tape counter, tape speed, remaining tape length, current date and time, etc.

Timer title
Just before a timer recording starts, the date, time and channel of the program are recorded.

Other convenient functions

AUTO TRACKING function
Automatically adjusts the tracking condition for optimum picture.

JOG dial, SHUTTLE ring and SHUTTLE EDIT buttons
Allow quick access to the desired scene.

Video/audio insert recording
Allows insertion of new picture/sound onto a prerecorded tape.

Function memory
Enables starting of the desired tape operation with a press of the button.

High-quality picture/sound

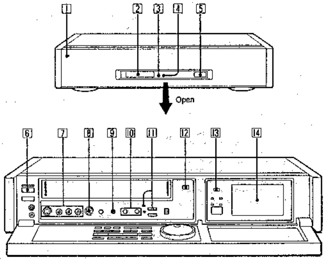
High-quality picture
The SLV-R5UC bears the S-VHS mark and provides sharp, finely detailed pictures through High Quality picture technology.
HQ: The video cassette recorder (VCR) with this marking incorporates VHS high-quality picture technology and is compatible with any video cassette recorder bearing the VHS mark.

High quality sound
This VCR automatically performs hi-fi recordings.

Dynamic range: More than 90 dB
Wow and flutter: Less than 0.005%
Audio frequency response: 20 — 20,000 Hz
Reproduces clear sound

Identifying the Operational Parts

Front



1 **POWER indicator**

2 **LCD (liquid-crystal display) Window (front panel)**
See "Indicators in the Display Window." (page 83)

3 **REC (recording) indicator**

4 **TIMER REC indicator**

5 **Remote sensor**

6 **POWER switch and indicator**
Press to turn on the power of the VCR. The indicator lights when power is supplied.

7 **LINE IN 2 S VIDEO connector (4-pin DIN type) and VIDEO/AUDIO jacks (phono type)**
Connect to the s video/video/audio output of other VCR or video camera.

8 **CONTROL L connector (5-pin DIN type)**
Connect to the CONTROL L connector of other Sony product for systematic operations such as synchronized editing.
If you connect a Sony editing controller RM-E300, you can perform automatic assemble editing of up to 8 programs.

About the LANC
LANC stands for Local Application Control Bus System. The LANC connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

9 **SHARPNESS control**
Adjust the sharpness of the playback picture if necessary. Normally set this control at the center indented position.

10 **REC LEVEL controls**
Adjust the audio recording level. Normally set these controls to the **5** position.

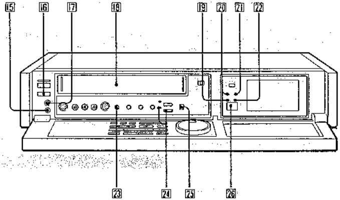
11 **EDIT MONITOR button and indicator**
Press to display the EDIT MONITOR display. The indicator lights when the EDIT MONITOR button is pressed.

12 **S-VHS switch**

13 **S-VHS indicator**

14 **Display window**
See "Indicators in the Display Window." (page 82)

Front



15 **PHONES (headphones) jack (stereo mini type)**
Connect headphones.

16 **≜ EJECT button**
Press to eject the cassette.

17 **MIC jack (mini type)**
Connect a microphone.

Note
A MIC jack of the SLV-R5UC is adaptable with the use of a monaural mini plug. If the plug used for your microphone is a stereo mini type, use a plug adaptor such as the PC-236MS or the PC-236HMS.

18 **Cassette compartment**
Insert a cassette. When the cassette is inserted, the power is automatically turned on.

19 **AUDIO INSERT indicator**
Lights when the AUDIO INSERT button is pressed.

20 **AUTO TRACKING indicator**
Blinks while the VCR is searching for the best tracking position.
Lights when the best position is obtained.

21 **HIGH SPEED REWIND indicator**
Lights when you press ◀◀◀ HIGH SPEED REWIND.

22 **VIDEO INSERT indicator**
Lights when the VIDEO INSERT button is pressed.

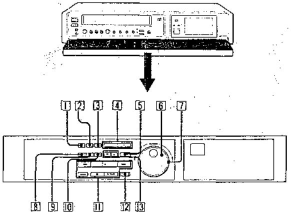
23 **PHONE LEVEL (headphone level) control**
Adjust the headphone level.

24 **SYNCHRO EDIT button and indicator**
Press to perform synchronized editing. The indicator lights when the SYNCHRO EDIT button is pressed.

25 **COMMAND MODE selector**
To remotely control the VCR with the supplied Remote Commander, set this selector to the same position as that on the Commander.
Usually set both selectors to VTR 3.

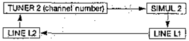
26 **Remote sensor**
Point the supplied Infrared Remote Commander RMT-V5A here.

Inside the Front Panel



1. **ANT TV/VTR button**
Press so that the VTR indicator lights to watch a program selected on the VCR. To watch one TV program while recording another, press this button again to turn off the indicator.
This button is effective when your TV is connected to the VCR via the VHF antenna terminal only.

2. **INPUT SELECT button**
Press so that the desired input mode indicator appears in the display window to select the program to be recorded. The indicator changes as follows.



3. **REC MODE button**
Press to select the recording tape speed, SP or EP.

4. **CHANNEL +/– buttons**
Press to select the preset channels. Press + to advance and – to reverse.

5. **TRACKING AUTO/MANUAL button**
Press to reactivate the automatic tracking function after adjusting tracking manually.

6. **JOG dial**
Use to wind or rewind the tape to the desired point. Turn to change the playback speed (frame-by-frame, slow, ×1) during playback or in recording pause mode.
Playback speed varies according to the speed at which you turn the dial.

7. **SHUTTLE ring**
Use to wind or rewind the tape to the desired point. Turn to select the playback speed (1/5, ×1, ×2 or continuous scan speed) during playback or in recording pause mode.

8. **EDIT ON/OFF button**
Normally keep this button at OFF (i.e. the EDIT indicator is off in the display window). When using this VCR for editing, press this button to light the EDIT indicator.

9. **TIMER REC ON/OFF button**
Press to set the VCR to timer recording standby mode.
When changing or canceling a timer recording, or operating the unit before a timer recording starts, press this button to get out of timer recording standby mode.

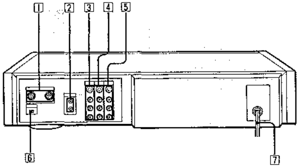
10. **QUICK TIMER button**
Press to start quick timer recording and to set the recording duration.

11. **Tape transport buttons**
◀◀ REW (rewind), ▷ PLAY, ▶▶ FF (fast-forward),
■ STOP, ❙❙/▶❙ PAUSE/STILL,
◀◀◀ HIGH SPEED REWIND

12. **● REC (recording) button**
Press to start recording.

13. **TRACKING NORMAL/SLOW and STILL ADJUST buttons**
Press either of the buttons to clear streaks that may appear on the screen during normal or slow speed playback or to reduce picture shaking in still mode.

Rear Panel



1. **VHF/UHF IN and OUT connectors (F type)**

2. **CONTROL S IN/OUT jacks (mini type)**
IN: Connect to the CONTROL S output jack of a Sony TV set or TV tuner to operate the VCR by remote control through them.
Also connect to the CONTROL S output jack of another Sony VCR for synchronized editing.
OUT: Connect to the CONTROL S input jack of other Sony product for systematic operations such as synchronized editing.

3. **LINE IN 1 S VIDEO connector (4-pin DIN) and VIDEO/AUDIO jacks (phono type)**
Connect to the LINE OUT AUDIO and S VIDEO/VIDEO jacks of other video equipments.
If you want to select the input from S VIDEO of LINE IN 1, set "LINE IN 1 VIDEO" on the MODE SET menu to "S". If you want to select the input from VIDEO, set the menu to "STD". (page 29)

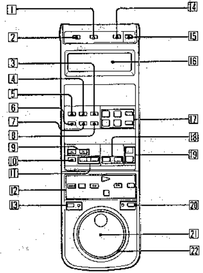
4. **LINE OUT S VIDEO connector (4-pin DIN) and VIDEO/AUDIO jacks (phono type)**
Connect to the LINE IN AUDIO and S VIDEO/VIDEO jacks of other video equipments.
If you connect the TV to these jacks, on-screen display does not appear.

5. **MONITOR OUT S VIDEO connector (4-pin DIN) and VIDEO/AUDIO jacks (phono type)**
Connect to the LINE IN jacks on a TV. The VCR displays on-screen display on the TV or monitor through this connection.

6. **RF UNIT selector**
Use to select the channel for VCR, 3CH or 4 CH, whichever is not active in your area.

7. **AC power cord**

Remote Commander



1. **TIMER REC ON/OFF button**
   Press to enter timer recording standby mode.

2. **LEARN/USER selector**
   Normally, set to USER.
   Set to LEARN to have this Commander memorize the functions. (See "Remotely Controlling TVs with the Supplied Commander" on page 16.)

3. **INDEX button**
   Press to enter the index function mode.

4. **TIMER ON SCREEN button**
   Use to display the timer settings on the TV screen.

5. **EDIT MONITOR button**

6. **DATA SCREEN button**
   Press to erase or display the on-screen display.

7. **AUDIO MONITOR button**
   Press to select the monitor sound.

8. **COUNTER RESET button**
   Press to reset the counter number to 0H00M00S.

9. **SHUTTLE EDIT buttons**
   Keep the buttons pressed to obtain 1/5 speed playback; <for reverse and> for forward playback.

10. **❚❚ PAUSE button**

11. **● REC (recording) buttons**
    Press two buttons simultaneously.

12. **Tape transport buttons**
    ⊖/⊕ SEARCH (reverse/forward)
    ▶ PLAY
    ◀◀ REW (rewind)
    ▶▶ FF (fast-forward)
    ■STOP
    ◀◀◀ HIGH SPEED REWIND

13. **JOG/SHUTTLE function button and indicator**
    Before using JOG and SHUTTLE on the Commander, press to make the VCR enter the still picture mode.

14. **ANT TV/VTR (Antenna TV/VTR) button**
    Press to light the VTR indicator in the display window to watch the playback picture or the TV program selected on the VCR. When you want to watch a TV program while the VCR is in use, press this button again to turn off the VTR indicator. This button is effective when your TV is connected to the VCR via the VHF antenna terminal only.

15. **POWER switch**

16. **LCD (liquid-crystal display) window**
    See "Indicators in the Display Window." (page 83)

17. **TV Operation buttons**
    VOL (volume) +/– buttons
    CHANNEL +/– buttons
    POWER switch
    TV/VIDEO button

18. **AUDIO and VIDEO INSERT buttons**
    Press to insert a new picture and/or sound onto a prerecorded tape.
    AUDIO: To insert sound on the normal audio track
    VIDEO: To insert picture and hi-fi sound on the video track

19. **CHANNEL +/– buttons**

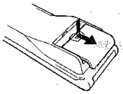
20. **CHANNEL function button and indicator**
    Before using JOG on the Commander for channel selection, press this button.

21. **JOG dial**
    Use to wind or rewind the tape to the desired point. Turn to select the playback speed by the turning speed during playback.

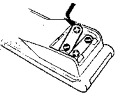
22. **SHUTTLE ring**
    Use to wind or rewind the tape to the desired point. Turn to select the playback speed by the turning angle during playback.

Battery insertion

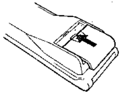
1 Open the lid.



2 Insert two size AA (IEC designation on R6) batteries with the polarity lined up correctly.

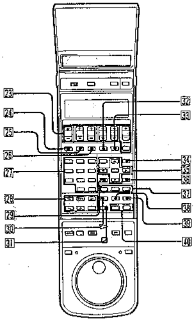


3 Close the lid.



Notes on batteries
- With normal operation, the batteries last for approximately 6 months.
- If the Commander is not to be used for a long period of time, remove the batteries to avoid possible damage from battery leakage.

Remote Commander



㉓ **Timer recording/clock set buttons**
❶ DAY
❷ TURN ON
❸ TURN OFF
❹ CH (channel)
❺ TRANS (transmit)

㉔ **CLOCK SET (SET/START) button**

㉕ **REC MODE button (Use for timer recording only)**
Press to select the recording tape speed, SP or EP.

㉖ **INPUT SELECT button (Use for timer recording only)**
Press to select the sources to be recorded.
The selected input mode indicator appears in the LCD window of the Commander.

㉗ **Channel number and ENTER buttons**
Press the appropriate button (s) and **ENTER** to select the channel directly.
For example, to select channel **10**, press **1**, **0** and **ENTER** or to select channel 4, press **4** and **ENTER**.

㉘ **Playback direction set, frame-by-frame, still, SLOW +/– and ×2 buttons.**
Press ►◄ for a still picture.
Press <◄ ‖/‖ ►> to select the direction for frame-by-frame picture in playback still mode.
Press <◄ ‖/‖ ►> to select the direction in any playback mode.
Press ‖► SLOW +/– for slow playback between 1/5 to 1/30 times normal speed. Press + or – to change the playback speed.
Press ×2 for double speed playback.

㉙ **FUNCTION MEMORY button**
Press to execute one of the sequential tape operations in the FUNCTION MEMORY menu assigned to this button.

㉚ **TIMER CLEAR button**
Press to clear the memory of the timer settings.

㉛ **TIMER CHECK button**
Press to check and correct the timer settings.

㉜ **MEMORY button**
Press to store the timer settings. Also use to call up the desired memory indication.

㉝ **NORM (normal)/CATV button**
To set cable TV channels for timer recording, press to light up the CATV indicator in the LCD window of the Commander. In this case, be sure to select CATV in the TUNER PRESET menu. (page 33)

㉞ **COMMAND MODE selector**
To remotely control the VCR with the Commander, set this selector to the same position as that on the VCR.
Usually set both selectors to VTR 3.
Change the position as shown below to control other Sony VCRs.
VTR 1: For Sony Betamax VCRs
VTR 2: For Sony 8mm format VCRs
VTR 3: For Sony VHS format VCRs

㉟ **Menu operation buttons**
Press **MENU** to display or erase the main MENU.
Press ◄/►/▲/▼ to move the cursor or change the setting and press **EXECUTE** to store the setting.

㊱ **TV SCAN button**
Press to watch each TV channel for a few seconds in the preset order.

㊲ **P in P (picture in picture) buttons**
P in P (for inserting the subsidiary picture in the playback picture)
SHIFT (for changing the position of the subsidiary picture)
DIGITAL OFF (for turning off the subsidiary picture).

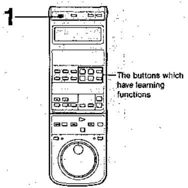
㊳ **REC MODE button**
Press to select recording tape speed, SP or EP.
For timer recording, use the other REC MODE button on the Commander. (See ㉕ REC MODE button.)

㊴ **INPUT SELECT button**
Press to select the sources to be recorded.
The selected input mode indicator appears in the display window of the unit.
For timer recording, use the other INPUT SELECT button on the Commander.
(See ㉖ INPUT SELECT button.)

㊵ **INDEX MARK/ERASE buttons**
Press to mark or erase an index signal on a tape during recording or playback.

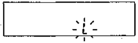
Remotely Controlling TVs with the Supplied Commander

You can operate Sony TVs with the TV operating buttons (POWER, TV/VIDEO, CHANNEL +/−, VOL +/−) on the supplied Remote Commander RMT-V5A.
In addition, the Commander can memorize the function of the remote control unit supplied to infrared remote control TVs other than Sony's. This "learning" function allows you to operate both your VCR and TV with this Remote Commander.

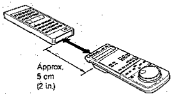


How to memorize the function of other remote control unit

1 Set LEARN/USER to LEARN.
The L indicator blinks in the LCD window.



2 Position the supplied Commander and the other remote control unit head to head.

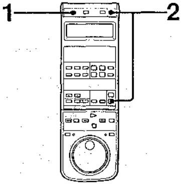


3 While pressing a button (eg: POWER for TV) of this Commander for which you want to memorize a function, keep pressing the function button (eg. power button) on the other remote control unit until the L indicator lights up and the MEMORY indicator appears.

To continue learning other functions, repeat step 3.

After learning is completed
Set LEARN/USER to USER.
You can operate the TV other than Sony with this Commander.

For accurate learning
Do not move the Commanders in the learning process.



To clear memorized functions

1 Set LEARN/USER to LEARN.

2 Keep pressing POWER for VCR and CHANNEL − for VCR until the C indicator blinks.
All the memorized functions are cleared and the functions of Sony TVs are restored.

Notes
- Before assigning a new function to a button, clear the memorized functions.
- When memories for learning functions are full, the MEMORY indicator lights and the E indicator blinks if you try to assign a new function. In this case, clear the memories.
- When there is equipment which emits noise, such as a fluorescent lamp, memories may become full as noise is also memorized to the buttons.
- If you open the cover of this Commander during learning function, the learning mode is released. Close it when you activate the learning function.

In the following cases, the E indicator blinks in the LCD window and the learning function does not work.
- When you press a button other than that for TV on this Commander.
- When you press two or more buttons on this Commander.
- When you press a button on the other control unit before pressing that on this Commander.

Connections

In order to watch the playback picture on the TV screen and receive TV programs on this VCR, the VCR and the TV must be connected properly.
The connections vary depending upon the type of TV and antenna that you have.
We will show you here some typical ways you can make these connections with the supplied accessories.
Before operating the VCR, read through this section and make the correct connections.

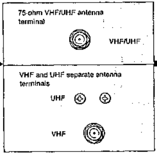
Before You Begin

- Turn off the power of the VCR and the TV.
- Do not connect the AC power cords until you complete all of the connections.
- **If your TV does not match the three examples below**
  Consult your nearest Sony dealer or qualified technician.

First Check Your TV

Basic connections

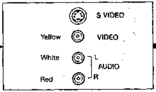
Check the antenna terminals on your TV


75-ohm VHF/UHF antenna terminal
VHF/UHF
VHF and UHF separate antenna terminals
UHF
VHF

Read through "Connecting Examples 1 to 5."

Additional connections

If your TV has S video connector/video and audio input jacks


S VIDEO
Yellow
VIDEO
White
L
AUDIO
Red
R

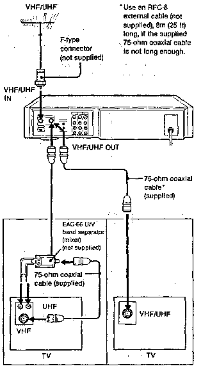
You can enjoy better picture quality.
Read through "Connecting Example 6."

If you have an stereo audio system

You can enjoy better sound quality by connecting the VCR to the audio system. Read through "Connecting Example 7."

Caution
Connections between the recorder VHF/UHF OUT connector and the antenna terminals of a TV receiver should be made only as shown in the instructions. Failure to do so may result in operation that violates the regulations of the Federal Communications Commission regarding the use and operation of rf devices.
Never connect the output of the recorder to an antenna or make simultaneous (parallel) antenna and recorder connections at the antenna terminals of your receiver.

Connecting Example 1
To Connect a Combination VHF/UHF Antenna


VHF/UHF
F-type connector (not supplied)
VHF/UHF IN
VHF/UHF OUT
75-ohm coaxial cable* (supplied)
EAC-66 U/V band separator (mixer) (not supplied)
75-ohm coaxial cable (supplied)
UHF
VHF
VHF/UHF
TV
TV

*Use an RFC-8 external cable (not supplied), 8m (25 ft) long, if the supplied 75-ohm coaxial cable is not long enough.

1 Disconnect the TV antenna cable from the TV and connect it to the VCR.

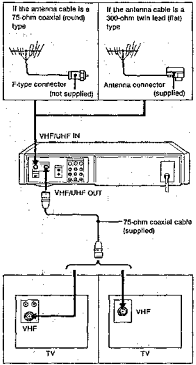
2 Connect the VCR and the TV.

If your TV has a single terminal for the VHF/UHF antenna
Connect directly using the supplied 75-ohm coaxial cable.

If your TV has separate VHF/UHF antenna terminals
Use a U/V band separator.

How to attach the U/V band separator and the F-type connector
See page 23.

Connecting Example 2
To Connect a VHF Antenna Only


If the antenna cable is a 75-ohm coaxial (round) type
F-type connector (not supplied)
If the antenna cable is a 300-ohm twin lead (flat) type
Antenna connector (supplied)
VHF/UHF IN
VHF/UHF OUT
75-ohm coaxial cable (supplied)
VHF
VHF
TV
TV

1 Disconnect the TV antenna cable from the TV and connect it to the VCR.

If the antenna cable is a 75-ohm coaxial (round) type
Use an F-type connector (not supplied).

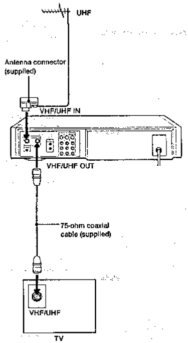
If the antenna cable is a 300-ohm twin lead (flat) type
Use the antenna connector (supplied).

2 Connect VHF/UHF OUT on the VCR and the VHF antenna terminal on the TV with the 75-ohm coaxial cable (supplied).

How to attach the antenna connector and an F-type connector
See page 23.

Connecting Example 3
To Connect a UHF Antenna Only

A **The VHF/UHF antenna terminal on the TV is combined**

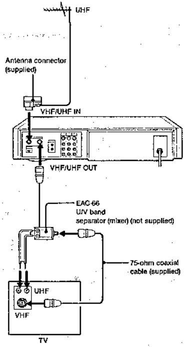

UHF
Antenna connector (supplied)
VHF/UHF IN
VHF/UHF OUT
75-ohm coaxial cable (supplied)
VHF/UHF
TV

1 Attach the supplied antenna connector to the cable.

2 Attach the antenna connector to VHF/UHF IN on the VCR.

3 Connect VHF/UHF OUT on the VCR and the VHF/UHF antenna terminal on the TV.

B **The VHF/UHF antenna terminals on the TV are separated**


UHF
Antenna connector (supplied)
VHF/UHF IN
VHF/UHF OUT
EAC-66 U/V band separator (mixer) (not supplied)
75-ohm coaxial cable (supplied)
UHF
VHF
TV

1 Attach the supplied antenna connector to the cable.

2 Attach the antenna connector to VHF/UHF IN on the VCR.

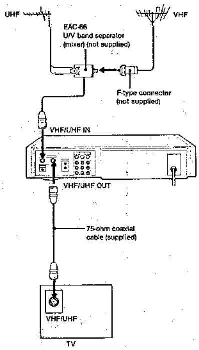
3 Attach the EAC-66 U/V band separator to VHF/UHF OUT on the VCR.

4 Connect the separator to the VHF and UHF antenna terminals on the TV.

How to attach the antenna connector and the U/V band separator
See page 23.

Connecting Example 4
To Connect Both the VHF and UHF Antennas

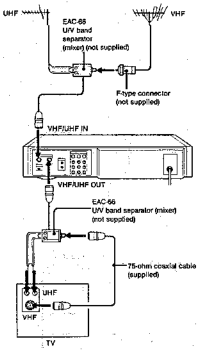
A **If the VHF/UHF antenna terminal on the TV is combined**


UHF
VHF
EAC-66 U/V band separator (mixer) (not supplied)
F-type connector (not supplied)
VHF/UHF IN
VHF/UHF OUT
75-ohm coaxial cable (supplied)
VHF/UHF
TV

1 Attach a U/V band separator (mixer) with the VHF and UHF antennas to VHF/UHF IN on the VCR.

2 Connect VHF/UHF OUT on the VCR and the VHF/UHF antenna terminal on the TV.

B **If the VHF/UHF antenna terminals on the TV are separated**


UHF
VHF
EAC-66 U/V band separator (mixer) (not supplied)
F-type connector (not supplied)
VHF/UHF IN
VHF/UHF OUT
EAC-66 U/V band separator (mixer) (not supplied)
75-ohm coaxial cable (supplied)
UHF
VHF
TV

1 Attach an U/V band separator (mixer) with the VHF and UHF antennas to VHF/UHF IN on the VCR.

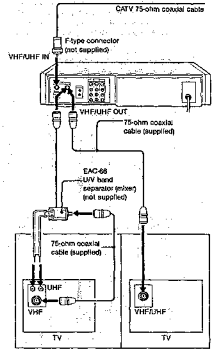
2 Attach an U/V band separator to VHF/UHF OUT on the VCR.

3 Connect the separator to the VHF and UHF antenna terminals on the TV.

How to attach a U/V band separator and an F-type connector
See page 23.

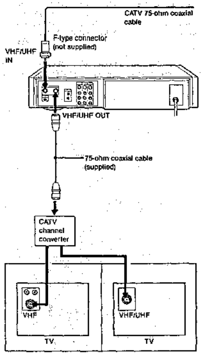
Connecting Example 5
To Connect a Cable TV System

A If your TV set has a built-in CATV decoder


CATV 75-ohm coaxial cable
F-type connector (not supplied)
VHF/UHF IN
VHF/UHF OUT
75-ohm coaxial cable (supplied)
EAC-66 U/V band separator (mixer) (not supplied)
75-ohm coaxial cable (supplied)
UHF
VHF
VHF/UHF
TV
TV

A connecting example is given above, however you should consult your cable company to make sure that the cable is properly connected.

B If your TV set does not have a built-in CATV decoder

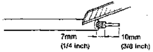

CATV 75-ohm coaxial cable
F-type connector (not supplied)
VHF/UHF IN
VHF/UHF OUT
75-ohm coaxial cable (supplied)
CATV channel converter
VHF
VHF/UHF
TV
TV

Connect the cable TV channel converter between the TV and the VCR.
By setting ANT TV/VTR to TV, you can watch a cable TV program while playing back or recording video sources using LINE IN VIDEO on the VCR.

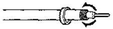
Note to CATV system installer in the U.S.A
This reminder is provided to call the cable TV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Attaching an F-type connector (not supplied)

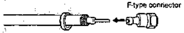
1 Strip the cover of the cable so that 3/8 inch of the center conductor is exposed.


7mm (1/4 inch)
10mm (3/8 inch)

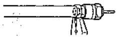
2 Slip the crimping ring over the cable and fold back the shield.



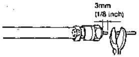
3 Insert the inner conductor into the F-type connector shaft and push the end of the cable into the connector as far as it will go.


F-type connector

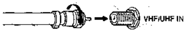
4 Slide the crimping ring over this assembly and pinch the crimping ring with pilars to hold the connector in place.



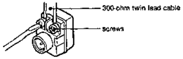
5 Cut the center conductor.



6 Insert the F-type connector into VHF/UHF IN on the VCR.

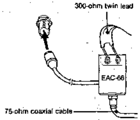


Attaching an external antenna connector (supplied)


300-ohm twin lead cable
screws

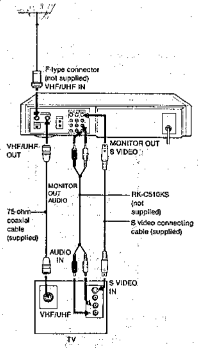
1 Loosen the screws on the antenna connector.
2 Fit the 300-ohm twin lead cable on the UHF antenna under the screws on antenna connector.
3 Tighten the screws again.

Attaching an EAC-66 U/V band separator (mixer) (not supplied)


300-ohm twin lead
EAC-66
75-ohm coaxial cable

1 Loosen the screws on the U/V band separator (mixer).
2 Fit the 300-ohm twin lead cable on the UHF antenna under the screws.
3 Connect the 75-ohm coaxial cable to the U/V band separator (mixer).
4 Connect the U/V band separator (mixer) to VHF/UHF IN or OUT on the VCR.

Connecting Example 6
To Connect a TV Equipped with Video/Audio Input Jacks

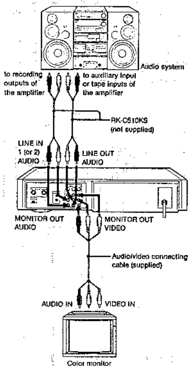

F-type connector
(not supplied)
VHF/UHF IN
VHF/UHF OUT
MONITOR OUT
S VIDEO
MONITOR
OUT
AUDIO
RK-C510KS
(not
supplied)
75-ohm coaxial cable (supplied)
S video connecting cable (supplied)
AUDIO
IN
S VIDEO
IN
VHF/UHF
TV

If your TV has an S video input connector and audio input jacks, connect them to the MONITOR OUT on the VCR to obtain a higher quality picture.

1 Make connections between an antenna and VHF/UHF IN on the VCR, and between VHF/UHF OUT on the VCR and the antenna terminal on the TV following examples 1 to 5 on pages 19 — 22.

2 Connect MONITOR OUT S VIDEO/MONITOR OUT AUDIO on the VCR and S VIDEO IN/AUDIO IN on the TV as illustrated.
If your TV does not have S VIDEO IN, connect MONITOR OUT VIDEO/MONITOR OUT AUDIO on the VCR and VIDEO IN/AUDIO IN on the TV with the supplied audio/video connecting cable.

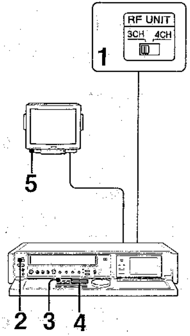
Connecting Example 7
To Connect an Audio System


Audio system
to recording outputs of the amplifier
to auxiliary input or tape inputs of the amplifier
RK-C510KS
(not supplied)
LINE IN
1 (or 2)
AUDIO
LINE OUT
AUDIO
MONITOR OUT
AUDIO
MONITOR OUT
VIDEO
Audio/video connecting cable (supplied)
AUDIO IN
VIDEO IN
Color monitor

You can enjoy tapes recorded in hi-fi stereo when the VCR is connected to your audio system.

Notes
- If the VCR is installed near a tuner or a radio, noise may be heard in AM reception. In this case, move the VCR away from the tuner or the radio, adjust the AM antenna for minimum noise, or connect an external AM antenna to the tuner.
- Since a hi-fi recorded tape has a wide dynamic range, turn down the volume on the amplifier before playing back the tape to avoid damaging the speakers.
- Before connecting or disconnecting the power cord of the VCR, be sure to turn off the connected amplifier.

Adjusting a TV


1
RF UNIT
3CH
4CH
5
2
3
4

If you have connected your VCR and TV via antenna terminals only, either channel 3 or 4 must be selected on your TV to receive the signal from the VCR. To get the proper RF signal, set the RF UNIT selector on the rear panel of the VCR.
If the connection between the VCR and TV has been made via video/audio jacks, skip this step.

1 Set **RF UNIT** to 3 CH or 4 CH.
If channel 4 is active in your area, set the selector to channel 3, and vice versa.

2 Press **POWER**.
The indicator lights.

3 Press **ANT TV/VTR** so that the VTR indicator lights.

4 Check that the TUNER indicator appears in the display window, then select an active channel in your area by pressing **CHANNEL +/–**.

5 Turn on the TV and select either VHF channel 3 or 4 whichever was set on RF UNIT.
The TV program selected on the VCR appears on the TV screen.

Your TV is now tuned to receive the signal from the VCR. Whenever you use the VCR, select the channel you choose above on the TV.

Note
For details about TV channel setting, see the instruction manual of the TV.

Menu System

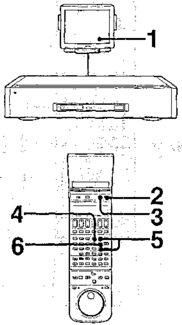
Many of the operations on this VCR are performed using a menu system. In this system you select a desired item from the items displayed on the TV screen.

First display the main MENU and select the item you want to operate or preset.

How to Display the Main MENU

Before you begin

- Check the connection between the VCR and the TV.
- If your TV is equipped with video/audio input jacks, be sure to connect them to MONITOR OUT on the VCR for on-screen display. On-screen display does not appear if the TV is connected to LINE OUT VIDEO.



To erase the menu display
Press MENU again.

To display another menu display
Press MENU to erase the present menu and repeat steps 4 to 6.

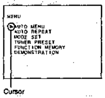
Operation

1 Turn on the TV.
If your TV is equipped with video/audio input jacks
Select the input for the VCR.
If your TV is not equipped with video/audio input jacks
Select the channel for the VCR (3 or 4).

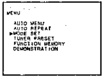
2 Press **POWER.**

3 Press **ANT TV/VTR** so that the VTR indicator lights. (Only for TV without video/audio input jacks)

4 Press **MENU.**
The main MENU appears.

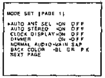

MENU
AUTO MENU
AUTO REPEAT
MODE SET
TUNER PRESET
FUNCTION MEMORY
DEMONSTRATION
Cursor

5 Move cursor to the desired menu with ▲ or ▼.


MENU
AUTO MENU
AUTO REPEAT
▶MODE SET
TUNER PRESET
FUNCTION MEMORY
DEMONSTRATION

6 Press **EXECUTE.**
The selected menu display appears.

Example


MODE SET [PAGE 1]
▶AUTO ANT SEL ▸ON OFF
AUTO STEREO ▸ON OFF
CLOCK DISPLAY▸ON OFF
DIMMER ON ▸OFF
NORMAL AUDIO▸MAIN SAP
BACK COLOR ▸BL GR PK
NEXT PAGE

Note
The position of the cursor is stored unless the power plug is disconnected.

About Each MENU

Here is a list of the menus that can be selected from the main MENU.
For details, refer to the sections indicated.

AUTO MENU
Select the desired automatic tape operation.
See "Presetting a Sequential Tape Operation". (page 40)

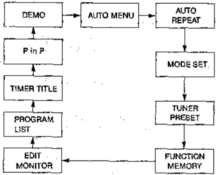
AUTO REPEAT
Select the portion which you want to play back repeatedly.
See "Playing Back a Tape Repeatedly". (page 42)

MODE SET
Set the desired mode.
See "Mode Setting". (page 28)

TUNER PRESET
Preset the active channels in your area.
See "Presetting Active Channels". (page 32)

FUNCTION MEMORY
Store one of the automatic tape operations to the FUNCTION MEMORY button on the Commander. You can activate the operation simply by pressing **FUNCTION MEMORY.**
See "Storing a Desired Tape Operation to the FUNCTION MEMORY Button". (page 41)

DEMONSTRATION
Select to display each menu and examples of EDIT MONITOR, PROGRAM LIST and TIMER TITLE in sequence, as follows.


DEMO
AUTO MENU
AUTO REPEAT
MODE SET
TUNER PRESET
FUNCTION MEMORY
EDIT MONITOR
PROGRAM LIST
TIMER TITLE
P in P

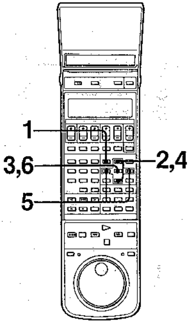
- Press **EXECUTE** to stop at the desired display. To resume the DEMONSTRATION display, press **EXECUTE** again.
- Press any key except **EXECUTE** to get out of the DEMONSTRATION mode.

Mode Setting

Before operating the VCR, change various mode settings if necessary.

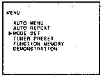
Operation

Use ▲ and ▼ to move cursor.
Use ▶ and ◀ to move dot.



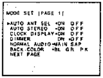
1 Press **MENU**.
The main MENU appears.

2 Move cursor to MODE SET.



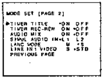
```
MENU

  AUTO MENU
  AUTO REPEAT
 ▶MODE SET
  TUNER PRESET
  FUNCTION MEMORY
  DEMONSTRATION
```

3 Press **EXECUTE**.
The MODE SET [PAGE 1] menu appears.



```
MODE SET [PAGE 1]

▶AUTO ANT SEL  •ON  OFF
 AUTO STEREO   •ON  OFF
 CLOCK DISPLAY•ON  OFF
 DIMMER          ON •OFF
 NORMAL AUDIO•MAIN SAP
 BACK COLOR   •BL  GR  PK
 NEXT PAGE
```

To display the MODE SET [PAGE 2] menu
Move cursor to NEXT PAGE and press **EXECUTE**.



```
MODE SET [PAGE 2]

▶TIMER TITLE    •ON  OFF
 TIMER REC-REW  ON •OFF
 AUDIO MIX      ON •OFF
 SIMUL AUDIO IN•L1  L2
 LANC MODE       M  •S
 LINE IN 1 VIDEO  S •STD
 PREVIOUS PAGE
```

To return to the [PAGE 1] menu, move cursor to PREVIOUS PAGE and press EXECUTE.

Note
The displayed page is stored unless the power plug is disconnected.

4 Move cursor to the desired mode.

MODE SET [PAGE 1] menus

AUTO ANT SEL (Automatic Antenna Selector)

- **If your TV is not equipped with video/audio inputs**
  Set to ON.
  When playing back a tape, the picture is automatically displayed on the screen simply by selecting the channel for the VCR on the TV.
  To watch TV programs selected on the TV, press ANT TV/VTR to turn off the VTR indicator in the display window.
- **If your TV is equipped with video/audio inputs**
  Set to OFF.
  When playing back a tape, select the input for the VCR on the TV.
  To watch the TV programs selected on the TV, simply select the tuner input.

AUTO STEREO
If a stereo program received is noisy, set to OFF. The program is recorded in monaural but noise may be reduced.

CLOCK DISPLAY
To erase the current date and time from on-screen display, set to OFF.

DIMMER
To dim the display window, set to ON.

NORMAL AUDIO
When there is a SAP (Second Audio Program) broadcast, select SAP to record the SAP sound on the normal audio track. For details, see page 51.

BACK COLOR
Select the background color on the screen when no picture is displayed or the VCR is in MENU mode.
BL. . .blue
GR. . .green
PK. . .pink

MODE SET [PAGE 2] menus

TIMER TITLE
If you do not want to record a timer title consisting of date of recording, etc. on the tape before timer recording, set to OFF. For details, see page 62.

TIMER REC – REW
To automatically rewind the tape to recording start point after timer recording, set to ON. For details, see page 56.

AUDIO MIX
To listen to the sounds recorded on both the hi-fi video track and the normal audio track of the audio-inserted tape, set to ON. For details, see page 39.

SIMUL AUDIO IN
For FM simulcast recording select L1 or L2 according to which an FM tuner is connected. For details, see page 68.

LANC MODE
For synchronized editing by controlling with this VCR, set to M.
Set to S when you edit a tape with an editing controller such as the Sony RM-E300.

LINE IN 1 VIDEO
If you want to select the input from S VIDEO of LINE IN 1 VIDEO, set to S.
If you want to select the input from VIDEO of LINE IN 1 VIDEO, set to STD (standard).

5 Move dot to the desired setting.

6 Press **EXECUTE** to return to the original screen.
The settings are stored.

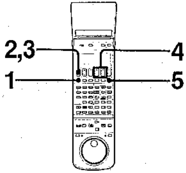
Date and Clock Setting

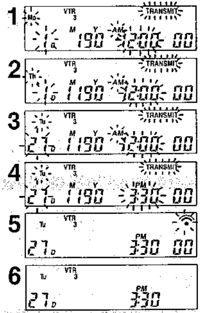
You can set the date and time between the years 1990 and 2005. Set the current date and time with the Remote Commander and transmit to the VCR.

Before You Begin

Check to see whether the **JOG/SHUTTLE** or **CHANNEL** indicator on the Commander is turned off. If not, press **JOG/SHUTTLE** or **CHANNEL** button to turn off the indicator.

Operation





Example: To set to November 27, 1990, 3:30 p.m.

1. Open the cover.
   To change the clock setting, open the cover and press **CLOCK SET (SET/START)**.

2. Keep pressing the **D** (date) button** until 11 M 90 Y is displayed.
   The date will be incremented slowly up to 30 days ahead and then the month will be incremented.
   **To advance the digits one by one, press the D button and immediately release it.

3. Press the + side or − side of the D (date) button until 27D is displayed.
   The day of the week appears automatically.

4. Press the H (hour) and M (minute) buttons under TURN OFF to set the current time.

5. Point the Commander at the VCR and press **TRANS** (transmit). For accurate setting, press TRANS simultaneously with an announced time signal.
   A beep sound confirms that the date and clock setting is registered in the VCR as well.

6. Check the display window of the VCR and close the cover of the Commander.

If a short beep sounds repeatedly when you press TRANS
The VCR is in timer recording, quick timer recording or timer recording standby mode. The setting cannot be transmitted.

When AM12:00 is blinking in the display window of the VCR
There has been a power interruption for more than 3 hours or the power cord has been disconnected for more than 3 hours. You will have to re-set the date and clock again.

Presetting Active Channels

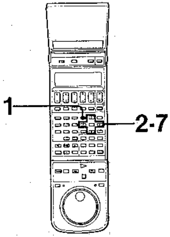
This VCR is capable of receiving VHF/UHF channels 2 to 69 and CATV channels 1 to 125. You can preset all receivable channels automatically by automatic presetting so that they appear in numerical sequence when you press CHANNEL +/–. If there are unwanted channels, you can erase them manually or if you know the channel numbers to be preset, you can preset them manually so that only the desired channels appear when you press CHANNEL +/–.

Before Presetting Channels

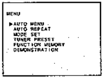
- Turn on the VCR and the TV.
- If your TV is not equipped with video/audio input jacks, set the TV to the correct channel (3 or 4) for the VCR and press **ANT TV/VTR** to display the VTR indicator.
- If your TV is equipped with video/audio input jacks, select the video input on the TV.
- The on-screen display does not appear unless the TV is connected to MONITOR OUT on this VCR.
- Press **INPUT SELECT** so that the TUNER indicator and the channel number appear in the display window.

To Preset All Receivable Channels Automatically

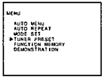
Use ▲ and ▼ to move cursor.
Use ▶ and ◀ to move dot.



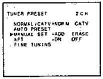
1 Press **MENU.**
The main MENU appears.


MENU
▶AUTO MENU
AUTO REPEAT
MODE SET
TUNER PRESET
FUNCTION MEMORY
DEMONSTRATION

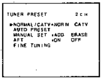
2 Move cursor to TUNER PRESET.


MENU
AUTO MENU
AUTO REPEAT
MODE SET
▶TUNER PRESET
FUNCTION MEMORY
DEMONSTRATION

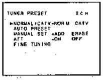
3 Press **EXECUTE.**
The TUNER PRESET display appears.


TUNER PRESET 2CH
NORMAL/CATV •NORM CATV
AUTO PRESET
▶MANUAL SET •ADD ERASE
AFT •ON OFF
FINE TUNING

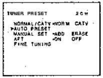
4 Move cursor to NORMAL/CATV.


TUNER PRESET 2CH
▶NORMAL/CATV •NORM CATV
AUTO PRESET
MANUAL SET •ADD ERASE
AFT •ON OFF
FINE TUNING

5 Move dot to NORM to preset VHF and UHF channels.
Move dot to CATV to preset cable TV channels.
The lowest channel number appears.
NORM: 2
CATV: 1


TUNER PRESET 2CH
▶NORMAL/CATV •NORM CATV
AUTO PRESET
MANUAL SET •ADD ERASE
AFT •ON OFF
FINE TUNING

6 Move cursor to AUTO PRESET.


TUNER PRESET 2CH
NORMAL/CATV •NORM CATV
▶AUTO PRESET
MANUAL SET •ADD ERASE
AFT •ON OFF
FINE TUNING

7 Press **EXECUTE.**
Receivable channels are automatically preset in numerical sequence.
When no more channels can be found, the presetting stops and the lowest numbered channel appears.

To Erase Unnecessary Channels

1 **After automatic presetting is over, follow steps 1 to 3 in "To Preset All Receivable Channels Automatically."**

2 Select the channel to be erased in either of the following ways:
- **Press the channel number button(s) and ENTER.**
- Press the **CHANNEL function button** to light the indicator and turn **JOG.**
  Turn it clockwise for higher numbered channels; counterclockwise for lower numbered channels.

3 Move cursor to MANUAL SET and select ERASE.

4 Press **EXECUTE.**
When scanning the channels, the erased channel is skipped.

Repeat steps 2 and 3 for other channels to be erased before pressing **EXECUTE.**

To Resume Erased Channel or Add a New Channel

1 Follow steps 1 to 3 in "To Preset All Receivable Channels Automatically."

2 Select the channel to be added with the channel number button(s) and ENTER.

3 Move cursor to MANUAL SET and select ADD.

4 Press **EXECUTE.**
When scanning the channels, the added channel appears.

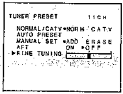
Repeat steps 2 and 3 for other channels to be added before pressing **EXECUTE.**

Fine-tuning a Received Channel

Normally the AFT (Auto Fine Tuning) function works and the VCR automatically tunes the received channels. If the picture of a received channel is distorted due to signal interference, fine-tune manually.

1 Follow steps 1 to 3 on page 32.

2 Move cursor to FINE TUNING.
The fine tuning indicator appears.



```
TUNER PRESET            11CH

  NORMAL/CATV •NORM  CATV
  AUTO PRESET
  MANUAL SET  •ADD   ERASE
  AFT          ON   •OFF
 ▶FINE TUNING
```

3 Fine-tune with ▶ or ◀ to get a clear picture.
If you cannot get a better picture, move cursor to AFT and select ON.

4 Press EXECUTE.

About the FINE TUNING indicator
The FINE TUNING indicator shows the operable extent of the fine tuning.
- When the VCR is receiving a broadcast in the best condition, the indicator is at the center or one space right or left of the center.
- Even if the VCR is receiving the broadcast in the best condition, it may happen that the indicator is not at the center.
- When the VCR is receiving input signal from a video game, the indicator may be off the center even though the VCR is receiving it in the best condition.

Cable TV Channel Assignment

Cable TV systems use letters or numbers to designate the channels. To tune-in a CATV channel, refer to the chart below which shows the CATV channel numbers on this VCR and the corresponding CATV channels. Note that the channel number assignment shown in the chart may not correspond to the channel number used by your local cable company. Check with your local cable TV company for more information on the available channels.

Number on this VCR	1	2	–	13	14	15	16	17	18
Corresponding CATV channel	A-8	2	...	13	A	B	C	D	E

19	20	21	22	23	24	25	26	27	28	29	30	31	32
F	G	H	I	J	K	L	M	N	O	P	Q	R	S

33	34	35	36	37	...	94	95	96	97	98	99
T	U	V	W	W+1	...	W+58	A-5	A-4	A-3	A-2	A-1

100	...	125
W+59	...	W+84

Cable TV services may vary from area to area. This VCR is designed to correspond to the Standard cable system but is capable of receiving the HRC[*1] or IRC[*2] system in optimum conditions.

*1 **HRC (Harmonic Related Carriers)**
All channels except for 5 and 6 are 1250 kHz lower than the Standard cable system. Channel 5 and 6 are 750 kHz higher than the Standard cable system.

*2 **IRC (Incremental Related Carriers)**
All channels except for 5 and 6 are the same as the Standard cable system. Channels 5 and 6 are 2000 kHz higher than the Standard cable system.

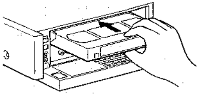
Note on the HRC and IRC cable systems
When this VCR is receiving a channel in the HRC or IRC cable system which differs in frequency from the Standard cable system, the FINE TUNING indicator may be off center even if the signals are received in good condition.

Note
Pay cable TV systems use scrambled or encoded signals and require special converters (decoders) in addition to the normal cable connection.

Handling Video Cassettes

Inserting a Cassette

Insert a cassette fully into the compartment by slowly pressing its center with the arrow indication facing upwards.
Even if the power is turned off, the power will be automatically turned on.

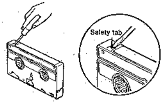


Ejecting a Cassette

Press ≜ EJECT to eject the cassette. As long as the AC power cord is connected to the wall outlet, you can eject the cassette even when the power of the VCR is turned off. After the tape is ejected, the power is automatically turned off.

To Avoid Erasing Previously Recorded Video Contents

When you make a new recording on a previously recorded cassette, the previous recording is automatically erased. To avoid unintentional erasure of previously recorded video sources, break off the safety tab on the cassette.
To re-record on the cassette, cover the slot where the safety tab used to be located with plastic tape.



Maximum Recording Time of a Tape

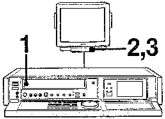
Recording in the SP or EP mode is possible with this VCR.
When recording, select the desired recording time (SP or EP) with REC MODE on the Remote Commander or the VCR.
During playback, the VCR automatically detects the recording format, and then plays it back in the appropriate mode.
An SP Tape runs three times as fast as an EP tape does.
In playback mode, LP mode is possible. But you cannot record in LP mode.
Refer to the chart below for the recording/playback time available in each mode.

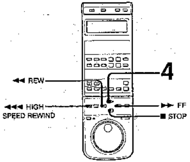
REC MODE setting	Cassette tape			
	T-160	T-120	T-60	T-30
SP (standard)	2 hr. 40 min.	2 hr.	1 hr.	30 min
EP	8 hr.	6 hr.	3 hr.	1 hr. 30 min.

Note on tapes recorded in LP mode
Playback of tapes recorded in LP mode is possible with this VCR. However, playback in modes other than normal speed forward is not guaranteed.

Playing a Tape

Basic Playback





1 Insert a cassette.

2 Turn on the TV.

3 **If your TV is equipped with video/audio input jacks**
Select the input for the VCR.
If your TV is not equipped with video/audio input jacks
Select the channel for the VCR (3 or 4).

4 Press ▶ PLAY.

To stop playback, press ■ STOP.

To advance the tape rapidly, press ▶▶ FF.

To rewind the tape, press ◀◀ REW.

To rewind the tape at high speed, press ◀◀◀ HIGH SPEED REW.

If you insert the cassette with its safety tab removed, playback starts automatically.

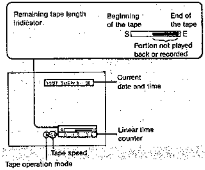
When the tape is played back to the end, the tape is automatically rewound to the beginning (auto rewind). The power remains on.

About the Data Screen

The data screen information is displayed on the screen.
To erase the data screen display, press **DATA SCREEN** on the Commander.
To erase only the current date and time, see page 29.

Notes
- If your TV is equipped with video/audio input jacks, the data screen is not displayed unless the TV is connected to MONITOR OUT on this VCR.
- When the VCR is in slow motion or still playback mode, the data screen does not appear.

Notes on the remaining tape length indicator
- The displayed remaining tape length is not precise. Use it only as an approximate reference.
- When you insert a short tape such as T-20, T-30 or a nonstandardized commercially available tape, this indicator may not function correctly.



Various Playback Modes

To obtain a still picture
During playback mode press ❚❚/▶❚ PAUSE/STILL on the VCR or ❚❚ PAUSE on the Commander.
To return to normal playback, press ▶ PLAY or ❚❚/▶❚ PAUSE/STILL or ❚❚ PAUSE.
When the pause mode lasts for more than 5 minutes, the VCR re-enters the playback mode automatically.

To search for a particular scene — Picture search
During playback mode, press ◀◀ REW or ▶▶ FF.
While the button is pressed, a high speed picture without sound appears on the TV screen.
When you release the button, the VCR returns to the previous mode.

To search for a particular scene — Locked picture search
During the playback mode, press ⊟ SEARCH or ⊞ SEARCH on the Commander.
A high speed picture in forward or reverse appears on the screen even when the button is released. To resume normal playback, press ▶ PLAY.

To watch a slow motion playback
During playback mode, press SLOW on the Commander.
+: To increase the speed
–: To decrease the speed

To view the picture momentarily while the VCR is in the fast-forward or rewind mode without picture on the TV screen
During fast-forward mode, press ▶▶ FF.
During rewind mode, press ◀◀ REW.
You can see a high speed playback picture while the button is pressed. Release the button to return to the previous mode.

To view a playback picture at 2 times the normal speed
During playback mode, press ×2 on the Commander.
Press ▶ PLAY to resume normal playback.

To view reverse direction playback, slow and ×2 picture
During forward playback of the desired mode, press <(◀❚❚) on the Commander. Press ▶ PLAY or > (❚❚▶) to resume forward playback.

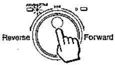
To watch a frame-by-frame picture
During still mode, press ❚❚▶ to advance the picture one frame. Press ◀❚❚ to reverse the picture one frame. Each press of ◀❚❚ or ❚❚▶ moves the picture one frame. Press ▶ PLAY to resume normal playback.

Various Playback Modes Using JOG/SHUTTLE

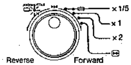
1 Press ▶ PLAY.

2 **If you use the Remote Commander**
Press the JOG/SHUTTLE function button.
The VCR enters the still picture mode.

3 **Using the JOG dial**
Playback speed varies according to the speed at which you turn the dial. (frame-by-frame, slow, ×1)



Using the SHUTTLE ring
Turn the ring and hold it. Playback speed can be selected according to the turning angle.



4 Releasing **JOG** or **SHUTTLE** makes a still picture.
To resume normal playback, press ▶ PLAY.

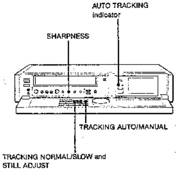
If streaks or noise appear in a slow motion picture
Adjust **TRACKING NORMAL/SLOW** and **STILL ADJUST** inside the front panel of the VCR.
You can adjust the picture more easily at speeds closer to normal playback.

If the picture appears to shake in the still mode
Adjust **TRACKING NORMAL/SLOW** and **STILL ADJUST** until the picture stabilizes.

If a noise band appears on the top or bottom of the picture in the still mode
Change to the slow motion mode, and then adjust **TRACKING NORMAL/SLOW** and **STILL ADJUST.**

Notes
- When the tape recorded in the LP mode is played back in one of various playback modes, the noise may appear.
- Streaks or noise cannot be eliminated completely in reverse playback or reverse slow motion playback mode.

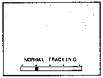
Adjusting the Picture during Normal Playback



Automatic tracking function
The tracking condition is automatically adjusted on this VCR. The AUTO TRACKING indicator blinks while the VCR is searching for the best tracking condition and lights when optimum playback picture is obtained. The automatic tracking control is activated in the following conditions:
- when the cassette is inserted and played back.
- when the recording mode on the playback tape is changed.
- when the picture is distorted by scratches etc. on the tape.
- when the AUTO TRACKING indicator is turned on by pressing **TRACKING AUTO/MANUAL** after the picture is adjusted manually. (See Manual tracking adjustment.)

Notes
- Auto tracking adjustment may be impossible and the tracking indicator does not appear on the TV screen when the recording condition of the tape is poor.
- During auto tracking adjustment, streaks or noise may appear.
- If the TV or color monitor is not connected to the VHF/UHF OUT connector or the MONITOR OUT AUDIO/VIDEO jacks, on-screen display cannot be obtained.
- When **DATA SCREEN** on the Commander is pressed, the tracking indicator does not appear on the TV screen.

Manual tracking adjustment
If streaks or snow appear during normal playback, adjust the picture with **TRACKING NORMAL/SLOW and STILL ADJUST ▼/▲**.
The tracking indicator appears on the TV screen and the AUTO TRACKING indicator on the VCR is turned off.
Press either ▼ or ▲ to get the optimum picture.



Press both ▼ and ▲ buttons simultaneously to return to the tracking center position.

Adjusting the sharpness
Turn **SHARPNESS** toward SHARP to get a sharper picture.
Turn it toward SOFT to get a softer picture.

Selecting the Monitor Sound

You can play back tapes on which stereo sound programs or bilingual programs are recorded on the VCR.

Press **AUDIO MONITOR** to select the desired sound.
Each press of the button changes the display.

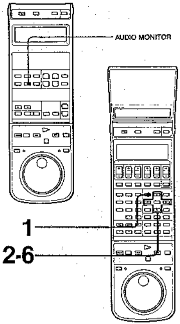
Display	Sound to be heard	
	Stereo tape	**Bilingual tape**
STEREO	Stereo	Left and right channels
MAIN/L	Left channel	Left channel
SUB/R	Right channel	Right channel
None	Monaural (on normal audio track)	Sound on normal audio track (SAP)

Note
When you play back a tape recorded in monaural, the sound is heard in monaural regardless of the setting of **AUDIO MONITOR**.

Listening to the Sounds on the Hi-fi Track and Normal Track Mixed

You can hear the sounds recorded on the hi-fi video track and the normal audio track simultaneously. This allows you to listen to an audio-inserted tape.

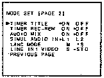
Use ▲ and ▼ to move cursor.
Use ▶ and ◀ to move dot.



1 Press **MENU**.
The main MENU appears.

2 Move cursor to MODE SET.

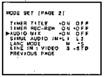
3 Press **EXECUTE**.
If the MODE SET [PAGE 1] menu appears, move cursor to NEXT PAGE and press **EXECUTE**.
The MODE SET [PAGE 2] menu is displayed.



```
MODE SET [PAGE 2]

▶TIMER TITLE      •ON  OFF
 TIMER REC-REW    ON  •OFF
 AUDIO MIX        ON  •OFF
 SIMUL AUDIO IN •L1  L2
 LANC MODE          M  •S
 LINE IN1 VIDEO     S •STD
 PREVIOUS PAGE
```

4 Move cursor to AUDIO MIX.

5 Move dot to ON.



```
MODE SET [PAGE 2]

 TIMER TITLE      •ON  OFF
 TIMER REC-REW    ON  •OFF
▶AUDIO MIX       •ON   OFF
 SIMUL AUDIO IN •L1  L2
 LANC MODE          M  •S
 LINE IN1 VIDEO     S •STD
 PREVIOUS PAGE
```

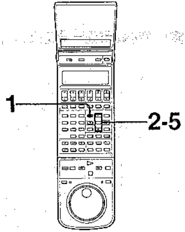
6 Press **EXECUTE** to return to the original screen.

Note
When you set AUDIO MIX to ON, the **AUDIO MONITOR** button does not function.
Reset to OFF after listening to the sound in AUDIO MIX mode.

Presetting a Sequential Tape Operation — AUTO MENU

By assigning the desired tape operation combination using the menu system, a tape operation of several steps is automatically performed.

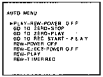
Use ▲ and ▼ to move cursor.



1 Press MENU when the tape is in stop mode.
The main MENU appears.

2 Move cursor to AUTO MENU.

3 Press EXECUTE.
The AUTO MENU appears.



```
AUTO MENU

▶PLAY-REW-POWER OFF
 GO TO ZERO-STOP
 GO TO ZERO-PLAY
 GO TO REC START - PLAY
 REW-POWER OFF
 REW-EJECT-POWER OFF
 REW-PLAY
 REW-TIMER REC
```

4 Move cursor to the desired tape operation.

5 Press EXECUTE.
The selected tape operation starts and the indication is superimposed on the screen for several seconds. The AUTO indicator lights in the display window during AUTO MENU operation.

To return to the original screen without executing the operation
Press MENU.

Even if the power is turned off
The cursor remains in its most recent position.

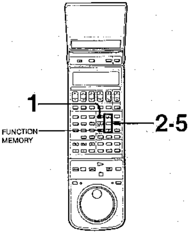
Note on "GO TO REC START – PLAY"
If you perform the following operations, the memory of the recording start position will be erased and "GO TO REC START – PLAY" is not operable.
- When you press COUNTER RESET.
- When you eject the cassette.
- When you press ◀◀◀ HIGH SPEED REWIND.

Note on REW – EJECT – POWER OFF
If the VCR is installed in the video rack with the door closed, the cassette may not be ejected. Turn off the power to stop operation.

Storing a Desired Tape Operation to the FUNCTION MEMORY Button

One of the tape operations in AUTO MENU can be stored to the FUNCTION MEMORY button on the Commander. You can make the VCR enter the desired tape operation only by pressing **FUNCTION MEMORY.**

Use ▲ and ▼ to move cursor.

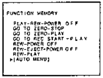


Note
This function is operable only when the tape is in stop mode.

1 Press MENU.
The main MENU appears.

2 Move cursor to FUNCTION MEMORY.

3 Press EXECUTE.
The FUNCTION MEMORY menu appears.



```
FUNCTION MEMORY

 PLAY-REW-POWER OFF
 GO TO ZERO-STOP
 GO TO ZERO-PLAY
 GO TO REC START - PLAY
 REW-POWER OFF
 REW-EJECT-POWER OFF
 REW-PLAY
▶[AUTO MENU]
```

4 Move cursor to the desired tape operation.

5 Press **EXECUTE** to return to the original screen.

Whenever you press **FUNCTION MEMORY** on the Commander, the stored tape operation starts automatically.

What does each AUTO MENU operation mean?

PLAY – REW – POWER OFF
The tape is played back to its end and rewound to its beginning. Then the power is turned off.

GO TO ZERO – STOP
The tape is fast-forwarded or rewound to around the counter zero point, and stops. See "Tape Return/Tape Return Play" (page 52) for detailed operation.

GO TO ZERO – PLAY
The tape is fast-forwarded or rewound to around the counter zero point, and is played back. See "Tape Return/Tape Return Play" (page 52) for detailed operation.

GO TO REC START – PLAY
The tape is fast-forwarded or rewound to the starting point of the recording, and is played back.

REW – POWER OFF
The tape is rewound to its beginning and the power is turned off.

REW – EJECT – POWER OFF
The tape is rewound to its beginning, and the cassette is ejected. Then the power is turned off.

REW – PLAY
The tape is rewound to its beginning and is played back.

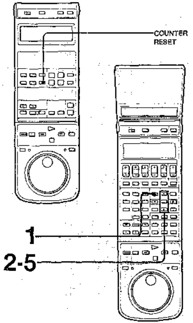
REW – TIMER REC
The tape is rewound to its beginning and the VCR enters the standby mode for timer recording when a timer recording has been preset.

[AUTO MENU]
The AUTO MENU is displayed immediately after you press **FUNCTION MEMORY,** providing a short cut to the AUTO MENU.

Playing Back a Tape Repeatedly — AUTO REPEAT

You can set the VCR to repeat playback of a certain portion of the tape.

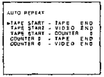
Use ▲ and ▼ to move cursor.



1 Press MENU while the tape is in stop mode.
The main MENU appears.

2 Move cursor to AUTO REPEAT.

3 Press EXECUTE.
The AUTO REPEAT menu appears.



```
AUTO REPEAT

▶TAPE START - TAPE    END
 TAPE START - VIDEO   END
 TAPE START - COUNTER   0
 COUNTER 0  - TAPE    END
 COUNTER 0  - VIDEO   END
```

4 Move cursor to the item you want to play back repeatedly.

5 Press EXECUTE.
The VCR rewinds or advances the tape rapidly to the start point of the assigned repeat portion, and repeats playback of that portion five times.
Then the VCR rewinds the tape to the start point.
The AUTO indicator lights in the display window during repeat playback.

To stop playback
Press ■ STOP on the VCR or the Commander.

If you press any tape operation button during repeat playback
The auto repeat function is released.

What does each AUTO REPEAT menu mean?

TAPE START – TAPE END
The VCR repeats playback from the beginning to the end of the tape.

TAPE START – VIDEO END
The VCR repeats playback from the beginning of the tape to the end of the recorded portion.

TAPE START – COUNTER 0
The VCR repeats playback from the beginning of the tape to the counter zero point.

COUNTER 0 – TAPE END
The VCR repeats playback from the counter zero point to the end of the tape.

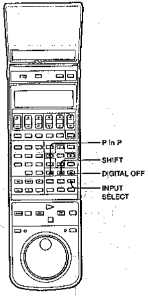
COUNTER 0 – VIDEO END
The VCR repeats playback from the counter zero point to the end of the recorded portion of the tape.

When you assign "COUNTER 0"
Before activating auto repeat function, press COUNTER RESET to set the tape counter to 0H00M00S at the desired point.

Note on "VIDEO END"
The VCR normally detects a blank of about 10 seconds on the tape as "VIDEO END". However, for about 30 seconds from the beginning of the tape, the VCR does not do this. Accordingly, the auto repeat function does not work correctly in the following cases.
- When there is a blank of more than 10 seconds in the assigned repeat portion (more than 40 seconds at the beginning of the tape).
- When there is a blank of less than 10 seconds after the recorded portion to be played back repeatedly.

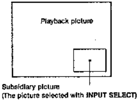
When you assign the menu including "VIDEO END"
If the tape is recorded to its end, auto repeat function does not work. Assign the menu including TAPE END.

Inserting Another Subsidiary Picture in the Playback Picture — P in P

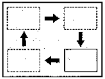

P in P
SHIFT
DIGITAL OFF
INPUT SELECT

Press **P in P** during playback.

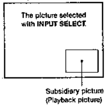
If you select **TUNER** with **INPUT SELECT**, you can watch the TV picture on the subsidiary screen.


Playback picture
Subsidiary picture
(The picture selected with INPUT SELECT)

To change the position of the subsidiary picture
Press **SHIFT**.
Each press change the position of the subsidiary picture as follows.



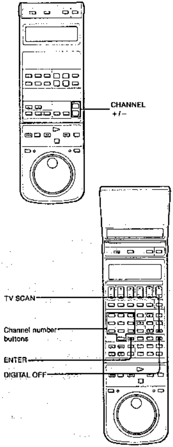
To invert the position of the subsidiary picture
Press **P in P** again.


The picture selected with INPUT SELECT.
Subsidiary picture
(Playback picture)

To turn off the subsidiary picture
Press **DIGITAL OFF**.

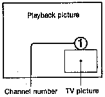
Notes
- If your TV is connected to LINE OUT on this VCR, the P in P function cannot be activated.
- When the playback picture is displayed in the main screen, if the no recorded portion is played back at speed except the normal one, the subsidiary picture will not be displayed.

Watching TV Channel in Succession — TV Scan


CHANNEL
+/–
TV SCAN
Channel number buttons
ENTER
DIGITAL OFF

You can watch each TV channel for a few seconds in the preset order during playback.

Press **TV SCAN** during playback.


Playback picture
①
Channel number
TV picture

After all the preset channels are displayed, the first preset channel will appear again.

To watch the desired channel in the subsidiary screen
Press the channel number button and **ENTER** or **CHANNEL +/–**.

To stop the TV scan
Press **CHANNEL +/–**, and then press **DIGITAL OFF**.

To turn off the subsidiary picture after the TV scan is completed
Press **DIGITAL OFF**.

Note
If your TV is connected to LINE OUT on this VCR, the TV scan function cannot be activated.

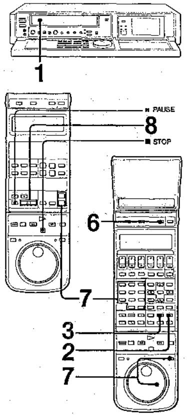
Recording TV Programs

Before You Begin

- Make sure that the connections and preparations are complete.
- Check that the REC LEVEL controls are set to the 5 position.

Caution
Television programs, films, video tapes and other materials may be copyrighted.
Unauthorized recording of such material may be contrary to the provisions of the copyright laws.
Also, use of this recorder with cable television transmission may require authorization from the cable television transmission and/or program owner.

Operation



To stop recording, press ■ STOP.

To stop the tape for a moment, press ❚❚ PAUSE.
To resume recording, press ❚❚ PAUSE again.
During recording, if the pause mode lasts for more than approximately 5 minutes, the VCR enters the stop mode automatically.

When the tape reaches its end
The tape is automatically rewound to the beginning and the power remains on.

1 Insert a cassette.
The VCR is turned on automatically (Auto power on).

2 Press **INPUT SELECT** to display the TUNER indicator in the display window.

3 Select the recording tape speed, SP or EP, with **REC MODE**.

4 Turn on the TV.

5 **If your TV is equipped with video/audio input jacks**
Select the input for the VCR.
If your TV is not equipped with video/audio input jacks
Select the channel for the VCR (3 or 4.)

6 Press **ANT TV/VTR** so that the VTR indicator lights.
(Necessary only when the VCR and the TV are connected via the VHF antenna terminal.)

7 Select the channel to be recorded in any of the following ways:
- Press **CHANNEL +/–**.
- Press the **channel number button(s)** and **ENTER**.
- Press the **CHANNEL function button to light the indicator and turn JOG.**
  Turn it clockwise for higher numbered channels; counterclockwise for lower numbered channels.

8 Press the two ● **REC** buttons simultaneously.
(On the VCR press ● **REC**.)
The REC indicator lights and recording begins.

What does the VTR indicator appearing in the display window indicate?

VTR indicator	What is shown
Lit	TV program selected by the VCR or playback picture
Unlit	TV program selected by a TV

To Stop Recording Momentarily at an Unwanted Scene

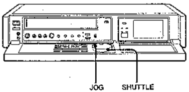
You can stop recording when an unwanted scene appears and then resume recording smoothly from a desired scene.

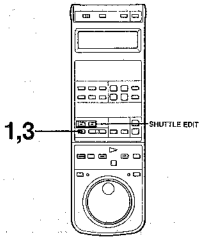
1 Press ❚❚ **PAUSE** when an unwanted scene appears.
The VCR enters recording pause mode.

2 Press ❚❚ **PAUSE** again at the point where you want to continue recording.

To Cut Out an Unwanted Scene by Recording Over It

If you have started recording unwanted scene, you can return the tape to the start of that scene and make the VCR enter recording pause mode.



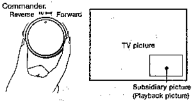


How to use JOG/SHUTTLE during playback or SHUTTLE EDIT in the playback pause mode
Use this function when the new picture should be recorded over the unwanted scene of the recorded tape.

1 Locate the desired scene with from where you want to re-record **JOG/SHUTTLE** or **SHUTTLE EDIT**. (When you release them, the VCR enters the playback pause mode.)
2 Press ● **REC** to set the VCR to the recording pause mode.
3 Press ❚❚ **PAUSE** at the desired scene to start recording.

1 Press ❚❚ PAUSE to set the VCR to the recording pause mode at an unwanted scene.

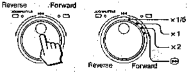
2 Rewind the tape to the desired point with **JOG/SHUTTLE** on the VCR or **SHUTTLE EDIT** on the Commander.



When you release **JOG/SHUTTLE** or **SHUTTLE EDIT**, the VCR resumes the recording pause mode.
If you want to invert the playback picture and the TV pictures, release **JOG/SHUTTLE** or **SHUTTLE EDIT** and then press **P in P** while the **subsidiary picture** is displayed.

3 Press ❚❚ **PAUSE** at the desired scene.
Recording starts again.

How to use JOG/SHUTTLE
Use JOG/SHUTTLE during playback or in recording pause mode. (JOG/SHUTTLE on the Commander does not function in recording pause mode.)



Release JOG/SHUTTLE to resume recording pause or still picture mode.

How to use SHUTTLE EDIT on the Commander
Use the buttons in playback pause or recording pause mode.
Keep < pressed to obtain 1/5 playback picture in reverse.
Keep > pressed to obtain 1/5 playback picture.

SHUTTLE EDIT
< >

Release the button to resume playback or recording pause mode.

To Record a Program without Watching the TV

Turn off the power of the TV or color monitor.
Recording continues.

Watching One TV Program While Recording Another

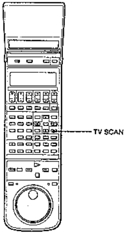
When the TV is connected only to VHF/UHF OUT

1 Press **ANT TV/VTR** so that the **VTR** indicator goes off.
2 Select the channel you want to watch on the TV.

When the TV is connected to MONITOR OUT
Select the tuner input and choose the channel you want to watch on the TV.

Note
If you use a color monitor, you cannot view another program during recording unless the monitor has an internal TV tuner.

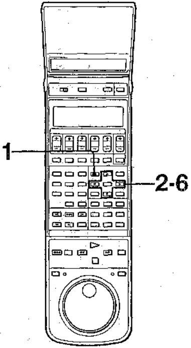
Watching TV Channel in Succession — TV Scan



When you view the TV program, press **TV SCAN**.
You can watch each TV channel for a few seconds in the preset order.

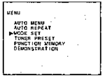
To record a stereo broadcast
When a stereo broadcast program is received, the STEREO indicator appears in the display window. The stereo program is automatically recorded in stereo.
If a stereo program is noisy, set AUTO STEREO to OFF in the MODE SET menu. The sound is heard in monaural but the noise is reduced.

Use ▲ and ▼ to move cursor.
Use ▶ and ◀ to move dot.



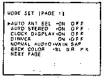
1 Press MENU.
The main MENU appears.

2 Move cursor to MODE SET.



```
MENU

 AUTO MENU
 AUTO REPEAT
▶MODE SET
 TUNER PRESET
 FUNCTION MEMORY
 DEMONSTRATION
```

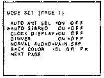
3 Press EXECUTE.
If the MODE SET [PAGE 2] menu appears, move cursor to PREVIOUS PAGE and press EXECUTE.
The MODE SET [PAGE 1] menu is displayed.



```
MODE SET [PAGE 1]

▶AUTO ANT SEL  •ON  OFF
 AUTO STEREO   •ON  OFF
 CLOCK DISPLAY •ON  OFF
 DIMMER         ON •OFF
 NORMAL AUDIO •MAIN SAP
 BACK COLOR   •BL  GR  PK
 NEXT PAGE
```

4 Move cursor to AUTO STEREO.

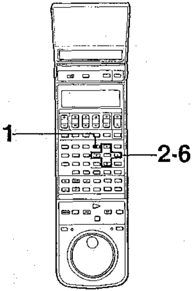
5 Move dot to OFF.



```
MODE SET [PAGE 1]

 AUTO ANT SEL  •ON  OFF
▶AUTO STEREO    ON •OFF
 CLOCK DISPLAY •ON  OFF
 DIMMER         ON •OFF
 NORMAL AUDIO •MAIN SAP
 BACK COLOR   •BL  GR  PK
 NEXT PAGE
```

6 Press EXECUTE to return to the original screen.

To record SAP (Second Audio Program) broadcast
Normally, set NORMAL AUDIO to MAIN in the MODE SET menu. The main sound is recorded on the normal track.
To record the SAP sound on the normal audio track, set NORMAL AUDIO to SAP in the MODE SET menu.

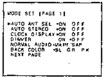


Notes
- When there is no SAP broadcast, select MAIN in step 5. If the SAP is selected, no sound will be recorded on the normal audio track.
- When the VCR and the TV are connected via the VHF antenna terminal, you cannot hear a program in stereo.

1 Press MENU.

2 Move cursor to MODE SET.

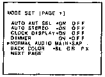
3 Press EXECUTE.
If the MODE SET [PAGE 2] menu appears, move cursor to PREVIOUS PAGE and press EXECUTE.
The MODE SET [PAGE 1] menu is displayed.



```
MODE SET [PAGE 1]

▶AUTO ANT SEL  •ON  OFF
 AUTO STEREO   •ON  OFF
 CLOCK DISPLAY •ON  OFF
 DIMMER         ON •OFF
 NORMAL AUDIO •MAIN SAP
 BACK COLOR   •BL  GR  PK
 NEXT PAGE
```

4 Move cursor to NORMAL AUDIO.

5 Move dot to SAP.



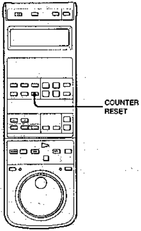
```
MODE SET [PAGE 1]

 AUTO ANT SEL  •ON  OFF
 AUTO STEREO   •ON  OFF
 CLOCK DISPLAY •ON  OFF
 DIMMER         ON •OFF
▶NORMAL AUDIO MAIN •SAP
 BACK COLOR   •BL  GR  PK
 NEXT PAGE
```

6 Press EXECUTE to return to the original screen.

To monitor the SAP sound being recorded
Press AUDIO MONITOR to light the SAP indicator in the display window.

Use of the Tape Counter

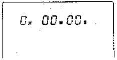
Indexing the Tape Contents



Before starting recording or playback, press COUNTER RESET to set the counter to zero. By noting the counter reading at the desired point, you can easily find that point later by referring to the counter.
Use the label on the cassette to list the programs and their counter readings.

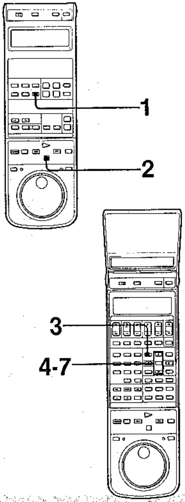
Note on counter reading
Even after the cassette is ejected, the counter reading is retained until a cassette is inserted again. The counter then returns to "0H00M00S".

Display window



Tape Return/Tape Return Play

Tape return
→ To search and stop the tape at the counter zero point.

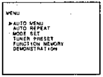


1 During recording or playback, press the COUNTER RESET at the point you want to locate later.
The tape counter changes to "0H00M00S".

2 When recording or playback is completed, press ■ STOP.

3 Press MENU.
The main MENU appears.

4 Move cursor to AUTO MEMU.

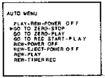


MENU

▶AUTO MENU
AUTO REPEAT
MODE SET
TUNER PRESET
FUNCTION MEMORY
DEMONSTRATION

5 Press EXECUTE.
The AUTO MENU appears.

6 Move cursor to GO TO ZERO – STOP.



AUTO MENU

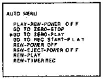
PLAY-REW-POWER OFF
▶GO TO ZERO-STOP
GO TO ZERO-PLAY
GO TO REC START-PLAY
REW-POWER OFF
REW-EJECT-POWER OFF
REW-PLAY
REW-TIMER REC

7 Press EXECUTE.
The tape is rewound or advanced close to the counter zero point, and stop at the counter zero point.

Tape return play
→ To search and playback from the counter zero point

1 Follow steps 1 to 5 in "Tape return" operation.

2 Move cursor to GO TO ZERO – PLAY.



AUTO MENU

PLAY-REW-POWER OFF
GO TO ZERO-STOP
▶GO TO ZERO-PLAY
GO TO REC START-PLAY
REW-POWER OFF
REW-EJECT-POWER OFF
REW-PLAY
REW-TIMER REC

3 Press EXECUTE.
The tape is rewound or advanced close to the counter zero point and starts playback.

Notes
- The tape counter does not work on the portions of the tape with no signals recorded.
- The counter zero point may be few seconds ahead or behind the exact time.

Timer Recording

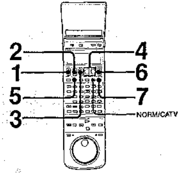
You can preset up to eight recordings as much as one month* in advance.
The recordings can be preset on the LCD window on the Commander, and be transmitted to the VCR. You can check the timer settings on the TV screen.

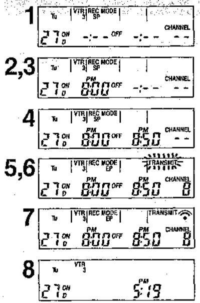
*** Recording from today to one month later**
If today is August 31st, you can set the timer to record a program broadcast between today and September 30 (for 31 days).
If today is January 31st, you can set the timer to record a program broadcast between today and February 28 (for 29 days). A Leap year is automatically calculated.

Before You Begin

- The date and clock must be set correctly. (See "Date and Clock Setting.") (page 30)
- Make sure the cassette tape is long enough to record all the programs.
- Be sure that the safety tab on the cassette has not been broken off.
- Set **REC LEVEL** to the **S** position.
- You can preset the timer recording without turning on the VCR.

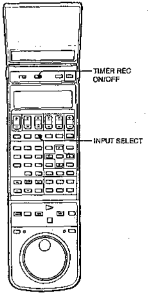
Operation





Example: To record channel 8 from 8:00 PM to 8:50 PM on Tuesday, November 27, 1990 in EP mode.

1. Open the cover of the Commander and press D until 27 appears.
   The day of the week, Tu (Tuesday), is automatically set.
2. Set the recording start hour with **TURN ON H.**
3. Set the recording start minute with **TURN ON M.**
4. Set the recording end hour and minute with **TURN OFF H** and **M** referring to step 2 and 3.
5. Press **REC MODE** to set the recording tape speed to EP.
6. Set the channel with the **CHANNEL +/–** button.
   If you want to set cable TV channels, press **NORM/CATV** on the Commander to display the CATV indicator.
   In this case, be sure to select CATV in the TUNER PRESET menu. (See page 33.)
   The TRANSMIT indicator blinks to indicate that all of the items are entered.
7. Point the Commander to the VCR and press **TRANS** (transmit).
   With a beep sound, the preset time appears on the LCD of the VCR and the program list appears on the TV screen for a few seconds. The VCR is turned off and enters the timer recording standby mode.
8. Close the cover of the Commander.
   The LCD display on the Commander indicates the date and clock setting.
   The VCR starts recording at the preset time, and turns off after recording ends.



To set other programmes
Repeat steps 1 to 7 in "Operation" before step 8.

To stop timer recording
Press TIMER REC ON/OFF.

Note
If you close the cover of the Commander before pressing **TRANS**, the settings on the Commander are erased.

To record from equipment connected to the LINE IN 1 or LINE IN 2
Press **INPUT SELECT** anytime in step 1 to 6 to display L1 (LINE 1) or L2 (LINE 2) in the LCD window. If you want to select the input from S VIDEO of LINE IN 1, SET "LINE IN 1 VIDEO" on the MODE SET menu to "S". If you want to select the input from VIDEO, set the menu to "STD".

To preset an FM simulcast recording
Set the desired channel and press **INPUT SELECT** to display the SIMUL indicator anytime in steps 1 to 6. For simulcast recording, see "FM simulcast recording" on page 68.

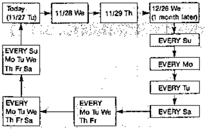
If a short beep sounds repeatedly when TRANS is pressed
Check the followings:
- No cassette is inserted.
- An illogical setting has been made.
- The tape is at its end.
- Eight timer settings have already been made.
- Tape is not in stop mode.

If a short beep sounds repeatedly and the cassette is ejected after pressing TRANS
The safety tab of the inserted cassette is removed.

Information about timer recording
- When the recording is completed, the memory of the program is erased if it is for only one day.
- If the tape reaches at its end before the turn-off time, recording will stop and the power will turn off.

If a power interruption occurs
- If a power interruption lasting less than approximately 3 hours occurs while the VCR is waiting for a preset time, the VCR will enter the standby mode for timer recording again. (If a power interruption lasting more than approximately 3 hours occurs before a timer recording the memory will be cleared. Reset the date and time, then preset the date for the timer recording again.)
- If a power interruption lasting less than approximately 3 hours occurs during a timer recording, the VCR will start recording again but the tape counter will indicate "0H00M00S."

Pressing DAY + changes the day indicator in the following order.


Today (11/27 Tu)
11/28 We
11/29 Th
12/26 We (1 month later)
EVERY Su
EVERY Mo
EVERY Tu
EVERY Sa
EVERY Mo Tu We Th Fr
EVERY Mo Tu We Th Fr Sa
EVERY Su Mo Tu We Th Fr Sa

Pressing DAY – changes the indicator in the reverse direction.

To select the every week or every day recording, press DAY – repeatedly until the desired indicator appears in step 2 in the "Timer recording".

At the same time every day	EVERY Su Mo Tu We Th Fr Sa
At the same time every day except Sunday	EVERY Mo Tu We Th Fr Sa
At the same time every day except Saturday and Sunday	EVERY Mo Tu We Th Fr
At the same time on the same day every week (Display the desired day of the week.)	EVERY Sa

To Rewind the Tape Automatically to the Recording Start Point After Timer Recording Is Over

1 Press MENU.
The main MENU appears.

2 Move cursor to MODE SET.

3 Press EXECUTE.
If the MODE SET [PAGE 1] menu appears, move cursor to NEXT PAGE and press EXECUTE.
The MODE SET [PAGE 2] menu is displayed.

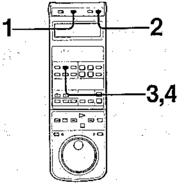
4 Move cursor to TIMER REC – REW.

5 Move dot to ON.

6 Press EXECUTE to return to the original screen.

Notes
- If other timer recordings have been preset, TIMER REC – REW does not function after one timer recording is over.
- If the tape comes to its end during timer recording, the tape will be rewound to the recording start point and the power will be turned off.

To Check the Timer Settings



You can check the timer settings by displaying a PROGRAM LIST on the TV screen.

1 Press TIMER REC ON/OFF to turn off the TIMER REC indicator.

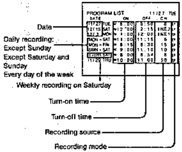
2 Turn on the VCR and TV.

3 Press TIMER ON SCREEN.
The PROGRAM LIST appears.

4 Press TIMER ON SCREEN to return to the original screen.

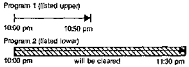
To return to timer recording standby mode
Press TIMER REC ON/OFF.

To check the settings without releasing timer recording standby mode
Press TIMER CHECK on the Commander. Each press changes the program in the display window one after another.

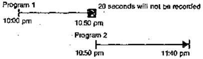

PROGRAM LIST
DATE
ON
OFF
CH
Date
Daily recording:
Except Sunday
Except Saturday and Sunday
Every day of the week
Weekly recording on Saturday
Turn-on time
Turn-off time
Recording source
Recording mode

When the Presettings of Timer Recordings Overlap

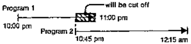
•If the turn-on times of two programs are the same
The recording listed upper on the PROGRAM LIST will be made. The memory of the program listed lower will be cleared (if it is for one-day program).


Program 1 (listed upper)
10:00 pm
10:50 pm
Program 2 (listed lower)
10:00 pm
will be cleared
11:30 pm

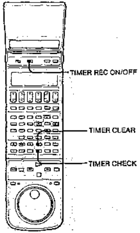
•If the recording start time of program 2 is the same as the recording end time of program 1
The last 20 seconds of program 1 will not be recorded.

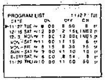

Program 1
20 seconds will not be recorded
10:00 pm
10:50 pm
Program 2
10:50 pm
11:40 pm

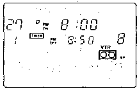
•If the recording start time of program 2 comes before the recording of program 1 is finished
The recording of program 2 begins before program 1 is finished.


Program 1
will be cut off
11:00 pm
10:00 pm
Program 2
10:45 pm
12:15 am

To Clear or Change the Timer Settings


TIMER REC ON/OFF
TIMER CLEAR
TIMER CHECK


PROGRAM LIST


27
8:00
1
8:50
8
VTR

Referring to the PROGRAM LIST

1 Display the PROGRAM LIST referring to steps 1 to 3 in "To check the Timer Settings."

2 Press **TIMER CHECK** to call up and move cursor to the setting you want to correct or clear.

3 To clear the setting, press **TIMER CLEAR**.
If there are other timer settings on the list, press **TIMER REC ON/OFF** to return to the timer recording standby mode.

To correct the setting, re-enter all of the items using the Commander. Refer to "Timer Recording — Operation" steps 1 to 7.
The VCR automatically enters the timer recording standby mode.

Clearing the setting without the PROGRAM LIST

1 Press **TIMER REC ON/OFF.**

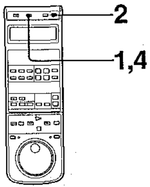
2 Press **TIMER CHECK** repeatedly until the desired programme appears in the display window of the VCR.

3 Press **TIMER CLEAR.**

4 Press **TIMER REC ON/OFF** to return to the timer recording standby mode if there are other programmes set for timer recording.

To Use the VCR during Timer Recording Standby Mode

If you want to use the VCR when it is in the timer recording standby mode, you must cancel the standby mode.



1 Press **TIMER REC ON/OFF** so that the TIMER REC indicator in the display window disappears.

2 Turn on the power of the VCR.

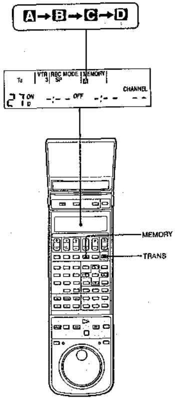
3 Operate the VCR.

4 After using the VCR, press **TIMER REC ON/OFF** so that the TIMER REC indicator appears.

To stop a timer recording after recording has started
Press **TIMER REC ON/OFF.**

You can use the following buttons during timer recording. Others are not operable.
- •TIMER REC ON/OFF
- •COUNTER RESET
- •ANT TV/VTR (to watch the picture broadcast on another channel)
- •DATA SCREEN
- •TIMER ON SCREEN

To Store the Frequently Used Timer Settings in the Commander



The items selected for one timer recording program will be erased from the LCD when the Commander cover is closed, and cleared from the program list as well when recording is over.
However, the turn-on/turn-off time and the program position of up to four programs can be stored in the Commander to be recalled later. This enables you to quickly access the most frequently used items, especially your favorite weekly program, since the recording date will automatically be shifted to the next week after the recording is over.

Storing the parameters

1 Press **MEMORY** to indicate MEMORY A.

2 Set all of the items for timer recording referring to "Timer Recording — Operation."

3 Press **MEMORY** to change the indication to B, C, or D, and repeat step 2 for other programmes.
The items set will be kept in the memory even when the Commander cover is closed.

Recalling and re-entering the items.

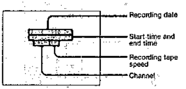
1 Press **MEMORY** to call up the desired memory indication (A, B, C, or D).

2 Make whatever changes necessary.

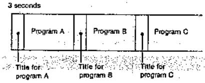
3 Press **TRANS.**
The VTR enters the timer recording standby mode.

Recording a Timer Title

A timer title which consists of the items below is recorded on the tape for approximately 3 seconds before each recording.


Recording date
Start time and end time
Recording tape speed
Channel

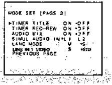
This function makes it easier to search for a certain program when several programs have been recorded on a single tape.


3 seconds
Program A
Program B
Program C
Title for program A
Title for program B
Title for program C

If you do not want a title to be recorded

Use ▲ and ▼ to move cursor.
Use ▶ and ◀ to move dot.

1. Press **MENU**.
   The main MENU appears.
2. Move cursor to MODE SET.
3. Press **EXECUTE**.
   If the MODE SET [PAGE 1] menu appears, move cursor to NEXT PAGE and press **EXECUTE**.
   The MODE SET [PAGE 2] menu is displayed.
4. Move cursor to TIMER TITLE.
5. Move dot to OFF.



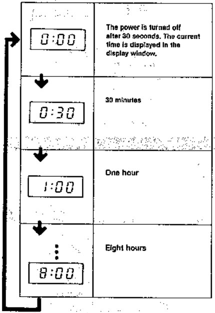
```
MODE SET [PAGE 2]

▶TIMER TITLE      ON •OFF
 TIMER REC-REW    ON •OFF
 AUDIO MIX        ON •OFF
 SIMUL AUDIO IN•L 1  L2
 LANC MODE           M  •S
 LINE IN 1 VIDEO     S  •STD
 PREVIOUS PAGE
```

6. Press **EXECUTE** to return to the original screen.

Quick Timer Recording

Recording Duration Indication

Every time you press **QUICK TIMER**, the recording duration indication in the display window changes as shown below.


0:00
The power is turned off after 30 seconds. The current time is displayed in the display window.
0:30
30 minutes
1:00
One hour
8:00
Eight hours

You can change the recording duration with **QUICK TIMER** even during quick timer recording. During recording, the displayed recording duration decreases minute by minute.

Buttons Operable During Quick Timer Recording

TIMER REC ON/OFF	To stop quick timer recording
QUICK TIMER	To change the recording duration
COUNTER RESET	To reset the tape counter to zero
ANT TV/VTR	To watch the picture broadcast on another channel
TIMER ON SCREEN	Check the timer recording settings
DATA SCREEN	To erase or display the on-screen display

If the tape runs out during quick timer recording
Recording stops and the power is turned off.
The tape is not rewound automatically.

If a cassette without its safety tab is inserted
The cassette is ejected automatically when you press **QUICK TIMER**.

If a power interruption occurs during quick timer recording
Recording stops and the power of the VCR turns off.
If the power interruption lasts less than three hours and the power is restored within the quick timer duration, recording starts again.

Index Function

The desired program on the recorded tape can be easily located by detecting an index signal.
The index signals must be marked at the beginning of the program on the tape.

To Mark Index Signals

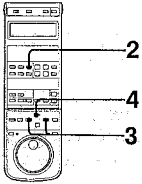
At the beginning of a recording, timer recording, or quick timer recording
An index signal is automatically marked on the tape.

To mark an index signal manually
Index signals can be marked at the desired scene during recording or normal playback.
Press **INDEX MARK** to mark an index signal. The INDEX indicator blinks in the display window and the INDEX MARK indicator appears on the screen while an index signal is being marked.

Notes
- Mark an index signal more than 2 minutes before or after the previous index signal so that the VCR can detect it correctly.
- While an index signal is being marked during playback, the recorded sound is not heard, but it will not be erased.
- You cannot mark an index signal in the following cases:
  - — On a tape without its safety tab
  - — On an unrecorded portion of a tape
  - — Immediately before a point on the tape where the tape speed (EP or SP) changes
  - — When playing back a tape recorded in the LP mode

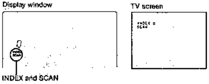
Index Scan

You can play back the beginning of each program in sequence using the index function.



1 Insert a cassette with index signals marked.

2 Press INDEX once.

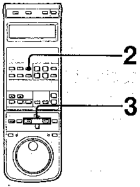


3 To scan the previous programs, press ◀◀ REW.
To scan the programs ahead, press ▶▶ FF.
The INDEX SCAN indicator blinks continuously while scanning.
The tape is rewound or rapidly advanced to the next marked index signal, the tape is played back for approximately 10 seconds, and then rewound or advanced to the next index signal.
The displayed index number increases one by one (up to 19).

4 Press ▶ PLAY when the desired program appears.
Normal playback of that program begins.

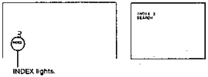
Index Search

You can locate the desired program and play it back automatically. You have to designate the number how many index signals ahead or behind the desired program is from the present one.
Up to 19 index signals from the present position on the tape can be located.



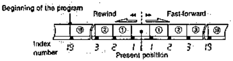
1 Insert a cassette with index signals marked.

2 Press **INDEX** until the index number of the desired program is displayed. The INDEX indicator and the INDEX SEARCH number light up.



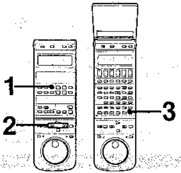
3 To locate a previous program on the tape, press **◀◀ REW.**
To locate a program ahead, press ▶▶ FF.
The tape is rewound or rapidly advanced.
Every time an index signal is detected, the INDEX SEARCH number decreases. When the number reaches 0, playback of the desired program begins.

How to designate the index number of the desired program



To Erase Index Signals

You can erase unnecessary index signals.



1 Press INDEX once.

2 Press ◀◀ REW or ▶▶ FF.
The tape is rewound or rapidly advanced. Every time an index signal is detected, the tape is played back and then rewound or advanced to the next index signal.

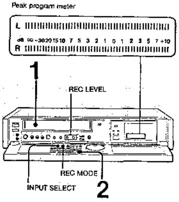
3 Press **INDEX ERASE** within approximately 10 seconds after you have verified the playback picture.

Notes
- While the index signal is being erased, the recorded sound is not heard but will not be erased.
- Index signals cannot be erased when they are marked just before and after the tape speed is changed or are marked on a LP mode tape.

Audio Recording

Hi-fi Recording

In conventional recording, audio signals are recorded on the audio track and video signals on the video track.
In hi-fi recording, audio signals are recorded in the same manner as video signals, using two rotary hi-fi audio heads. Thus, high-quality sound recording is possible.



Before you begin

- Your audio system must be correctly connected to the VCR. (See " Connections.") (page 24)
- Set **INPUT SELECT** to LINE 1 or LINE 2 according to which your audio system is connected.
- Set **REC MODE** to SP or EP.
- Adjust **REC LEVEL**.
  Play a recording source and manually adjust **REC LEVEL** while observing the PEAK PROGRAM METER.
  When recording from a disk or FM tuner:
  Adjust so that the right-most element sometimes lights up.
  When recording from a compact disc or PCM digital audio processor:
  Adjust so that the right-most element lights up only at the highest signal level.

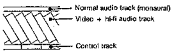
Note
The elements which light up may be slightly different between L and R indicators.

Operation

1 Insert a cassette.

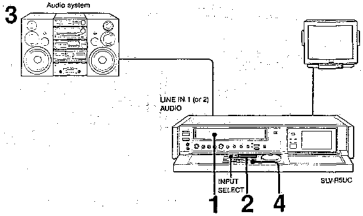
2 Press ● REC on the VCR or two ● REC buttons on the Commander simultaneously.

Hi-fi recording pattern on a tape
The VCR automatically performs hi-fi recording and normal audio recording at the same time, so that these tapes can also be played back on any VCR without a hi-fi system.



FM Simulcast Recording

Sometimes a TV station and FM radio station broadcast a program simultaneously.
By connecting an FM tuner besides the antenna connection, you can record the TV program in hi-fi stereo. The picture of the TV program and the sound from the FM tuner are recorded on the video track. The sound of the TV program is recorded on the normal audio track.



Before you begin

- Press **INPUT SELECT** to light the SIMUL indicator in the display window.
- Display MODE SET menu and select SIMUL AUDIO IN L1 (LINE 1) or L2 (LINE 2) according to which the FM tuner is connected. (For MODE SET menu, see page 28.)
- Other settings are the same as "Hi-fi recording" on page 67.

Operation

1 Insert a cassette.

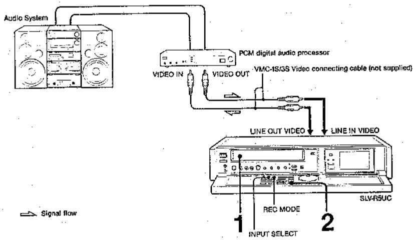
2 Select the channel you want to record on the VCR.

3 Select the station you want to record on the FM tuner.

4 Press ● REC on the VCR or two ● REC buttons on the Commander.

PCM Recording and Playback

You can enjoy PCM recording and playback by connecting a PCM digital audio processor to LINE IN and OUT VIDEO on this VCR.


Audio System
PCM digital audio processor
VIDEO IN
VIDEO OUT
VMC-1S/3S Video connecting cable (not supplied)
LINE OUT VIDEO
LINE IN VIDEO
SLV-R5UC
REC MODE
1
INPUT SELECT
2
Signal flow

Before you begin

- Press **INPUT SELECT** to light LINE 1 or LINE 2 according to which the PCM digital audio processor is connected.
- Select the tape speed, SP or EP with **REC MODE**.

Operation

1 Insert a cassette.

2 Press ● **REC** on the VCR or two ● **REC** buttons on the Commander.

- For details, refer to the instruction manual of the digital audio processor and the audio system.

Editing the Entire Tape Contents to Another Tape

Using an additional VCR, you can create your own video program tape.

Before You Begin

When you use this VCR as the recording VCR
Check the followings on this VCR.

- Press **INPUT SELECT** to light LINE 1 or LINE 2 according to which the other VCR is connected.
- Select the recording tape speed, SP or EP with REC MODE.
- Set **REC LEVEL** to **E**.
- When you use an S-VHS cassette, set the S-VHS switch to ON to record with S-VHS system or to OFF to record with VHS system.

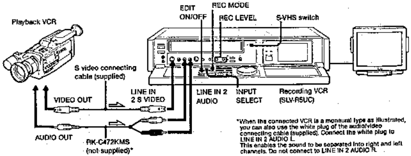
When you use this VCR as the playback VCR
Select the sound to be recorded with **AUDIO MONITOR** on the Commander.

Use of the EDIT ON/OFF button
Before editing, press EDIT ON/OFF to light the EDIT indicator in the display window. This enables recording and playback of higher quality pictures during editing. If the other VCR is equipped with this function, activate it. However, even when using this function, the quality of the edited tape will have a certain extent of deterioration in picture and sound. Avoid using the edited tape for multiple generation of editing.

Caution
Television programs, films, video tapes and other materials may be copyrighted.
Unauthorized duplication of such material may be contrary to the provisions of the copyright laws.

Editing a Home Movie Tape from Another VCR

Example: From an 8mm video camera recorder to this VCR


Signal flow
EDIT ON/OFF
REC MODE
REC LEVEL
S-VHS switch
Playback VCR
S video connecting cable (supplied)
VIDEO OUT
AUDIO OUT
RK-C472KMS (not supplied)*
LINE IN 2 S VIDEO
LINE IN 2 AUDIO
INPUT SELECT
Recording VCR (SLV-R5UC)

*When the connected VCR is a monaural type as illustrated, you can also use the white plug of the audio/video connecting cable (supplied). Connect the white plug to LINE IN 2 AUDIO L.
This enables the sound to be separated into right and left channels. Do not connect to LINE IN 2 AUDIO R.

1 Turn on the power of the playback VCR and insert a source tape.

2 Insert a tape for recording into this VCR.

3 Press **EDIT ON/OFF** to light the indicator in the display window.
Activate the EDIT ON/OFF mode if the playback VCR has this function.

4 Locate the playback start point on the playback VCR and set it to the playback pause mode.

5 Locate the recording start point on this VCR and set it to the recording pause mode.

6 Press the **PAUSE** button on both VCRs simultaneously.
The other VCR starts playback and this VCR starts recording.

When editing is completed
Press the **STOP** button on both VCRs.

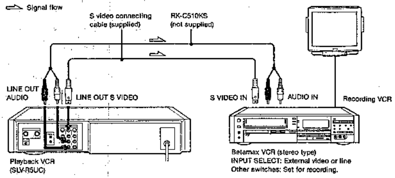
If the connected VCR is equipped with no S VIDEO OUT
Connect to VIDEO IN of this VCR with the VMC-910KMS (not supplied) video cable, etc.

When you connect another VCR to LINE IN 1 of this VCR
If you want to select the input from S VIDEO of LINE IN 1, set "LINE IN 1 VIDEO" on the MODE SET [PAGE 2] menu to "S".
If you want to select the input from VIDEO, set the menu to "STD". (See page 29.)

If the connected VCR is a stereo type
Use the RK-C510 video cable, etc. to make connection.

Editing a Home Movie Tape from This VCR

Example: From this VCR to a Sony Betamax VCR


Signal flow
S video connecting cable (supplied)
RK-C510KS (not supplied)
LINE OUT AUDIO
LINE OUT S VIDEO
S VIDEO IN
AUDIO IN
Recording VCR
Playback VCR (SLV-R5UC)

Betamax VCR (stereo type)
INPUT SELECT: External video or line
Other switches: Set for recording.

1 Insert a source tape into this VCR.

2 Turn on the power of the recording VCR and insert a tape for recording.

3 Press **EDIT ON/OFF** to light the EDIT indicator in the display window.
Activate EDIT function if the recording VCR has this function.

4 Locate the playback start point on this VCR and set it to the playback pause mode.

5 Locate the recording start point on recording VCR and set it to the recording pause mode.

6 Press the **PAUSE** button on both VCRs simultaneously.
This VCR starts playback and the other VCR starts recording.

When editing is completed
Press the **STOP** button on both VCRs.

If the connected VCR is a monaural type
- Use the VMC-910KMS/920KMS connecting cable (not supplied).
- To play back a cassette tape on which an MTS broadcast has been recorded, select the monitor sound with **AUDIO MONITOR** on the Commander.

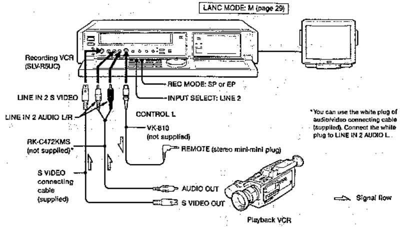
If the connected VCR has no S VIDEO IN
Connect to LINE OUT VIDEO/AUDIO of this VCR with the audio/video connecting cable (supplied), etc.

Note
Do not connect the same VCR to both the LINE IN and LINE OUT jacks of this VCR. This may cause a humming noise.

Synchronized Editing Recording and playback on two VCRs can be synchronized.

Editing a Home Movie Tape from Another VCR: Connecting a VCR equipped with a CONTROL L (REMOTE) connector

Example: From an 8 mm video camera recorder to this VCR


LANC MODE: M (page 29)
Recording VCR (SLV-R5UC)
LINE IN 2 S VIDEO
LINE IN 2 AUDIO L/R
RK-C472KMS (not supplied)*
S VIDEO connecting cable (supplied)
REC MODE: SP or EP
INPUT SELECT: LINE 2
CONTROL L
VK-810 (not supplied)
REMOTE (stereo mini-mini plug)
AUDIO OUT
S VIDEO OUT
Playback VCR
Signal flow

*You can use the white plug of audio/video connecting cable (supplied). Connect the white plug to LINE IN 2 AUDIO L.

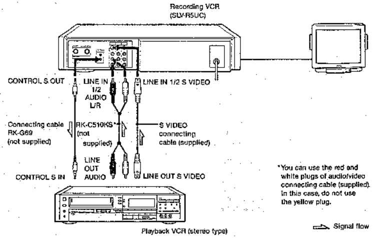
If the REMOTE connector of the connected video camera recorder is a 5-pin DIN connector
Use the VK-800 connecting cable instead of the VK-810.

When the connected video camera recorder is a monaural type as illustrated
You can also use the white plug of the audio/video connecting cable (supplied).
Connect the white plug to LINE IN 2 AUDIO L. This enables the sound to be separated into right and left channels. Do not connect the red plug to LINE IN 2 AUDIO R.

If you connect a Sony editing controller RM-E300
You can perform automatic assemble editing of up to 8 programs. Set "LANC MODE" on the MODE SET [PAGE 2] menu to S. (page 29)

Editing a Home Movie Tape from Another VCR: Connecting a VCR equipped with a CONTROL S IN jack

Example: From a Sony Betamax VCR to this VCR


Recording VCR (SLV-R5UC)
CONTROL S OUT
LINE IN 1/2 AUDIO L/R
LINE IN 1/2 S VIDEO
Connecting cable RK-G69 (not supplied)
RK-C510KS* (not supplied)
S VIDEO connecting cable (supplied)
CONTROL S IN
LINE OUT AUDIO
LINE OUT S VIDEO
Playback VCR (stereo type)
Signal flow

*You can use the red and white plugs of audio/video connecting cable (supplied). In this case, do not use the yellow plug.

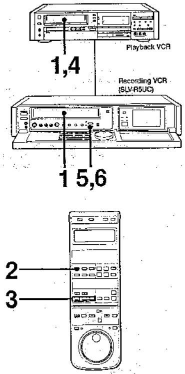
When you connect another VCR to LINE IN 1 of this VCR
If you want to select the input from S VIDEO of LINE IN 1, set "LINE IN 1 VIDEO" on the MODE SET [PAGE 2] menu to "S".
If you want to select the input from VIDEO, set the menu to "STD". (See page 29.)

If the connected VCR has no S VIDEO OUT
Connect to LINE IN 1/2 VIDEO/AUDIO of this VCR with the VMC-910MKS/920MKS connecting cable (not supplied).
If the connected VCR is a stereo type, use the audio/video connecting cable (supplied), etc.

If the connected VCR is a monaural type
- Use the VMC-910MKS/920MKS connecting cable (not supplied) instead of the RK-C510KS connecting cable.
- Connect the white plug of the audio/video connecting cable to LINE IN 2 AUDIO L. This enables the sound to be separated into right and left channels. Do not connect the red plug to LINE IN 2 AUDIO R.

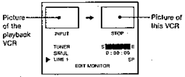
- For connection, see page 72 or 73.
- Before operation, see "Before you begin" on page 70.

Operation


Playback VCR
1,4
Recording VCR (SLV-R5UC)
1
5,6
2
3

1 Insert a source tape into the playback VCR and a tape for recording into this VCR.

2 Press **EDIT MONITOR.**


Picture of the playback VCR
Picture of this VCR
INPUT
TUNER
SIMUL
LINE 1
STOP
S E
0:00:00
SP
EDIT MONITOR

3 On this VCR, locate the recording starting point and set the VCR to the recording pause mode.

4 On the playback VCR, locate the point where you wish to start editing and set the VCR to the playback pause mode. Activate EDIT function if the VCR has this function.

5 Press **SYNCHRO EDIT.**
The playback and recording pause modes are released simultaneously and the editing starts.

When **SYNCHRO EDIT** is pressed, the EDIT indicator lights in the display window.

6 Press **SYNCHRO EDIT** to stop editing.
The playback VCR enters the playback pause mode and this VCR enters the recording pause mode.

To edit the next desired scene
Repeat steps 4 to 6.

To stop editing
Press the **STOP** button on both VCRs.

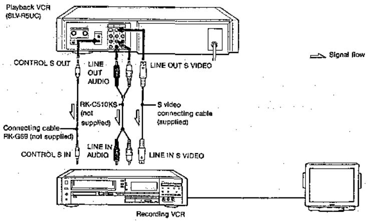
To avoid deterioration in picture
When **EDIT ON/OFF** is pressed and the EDIT indicator lights, the deterioration in picture can be reduced.
When **SYNCHRO EDIT** on this unit is pressed, the EDIT function is automatically activated.

When a new scene is inserted onto the recorded tape
See the "Insert editing" on page 79.
When the above editing function is used, the edited picture will be disturbed at the end point.

Notes
- As the time when the playback VCR functions completely after **SYNCHRO EDIT** is pressed is considered, the recording starts approximately 1 second after the playback pause mode is released.
- When this VCR is used as the recorder and the SYNCHRO EDIT indicator lights, if the picture is played back at the variable speed on the playback VCR, the variable speed (slow or double speed) picture is recorded.

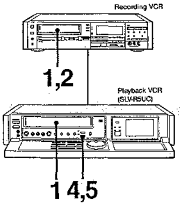
Editing a Home Movie Tape from This VCR: Connecting a VCR equipped with a CONTROL S IN jack

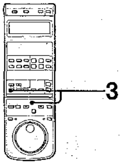
Example: From this VCR to a Sony Betamax VCR


Playback VCR (SLV-R5UC)
CONTROL S OUT
LINE OUT AUDIO
LINE OUT S VIDEO
Signal flow
RK-C510KS (not supplied)
S video connecting cable (supplied)
Connecting cable RK-G69 (not supplied)
CONTROL S IN
LINE IN AUDIO
LINE IN S VIDEO
Recording VCR

- For connection, see page 75.
- Before operation, see "Before you begin" on page 70.

Operation


Recording VCR
1,2
Playback VCR (SLV-R5UC)
1 4,5



1 Insert a source tape into this VCR and a tape for recording into the recording VCR.

2 On the recording VCR, locate the recording starting point and set the VCR to the recording pause mode.

3 On this VCR, locate the point where you wish to start editing and set the VCR to the playback pause mode.

4 Press **SYNCHRO EDIT**.
After the tape is rewound a little, the playback starts on this VCR. The recording starts at the recording starting point.

When **SYNCHRO EDIT** is pressed, the EDIT indicator lights in the display window.

5 Press **SYNCHRO EDIT** to stop editing.
This VCR is set to the playback pause mode and the recording VCR is set to the recording pause mode.

To edit the next desired scene
Repeat steps 3 to 5.

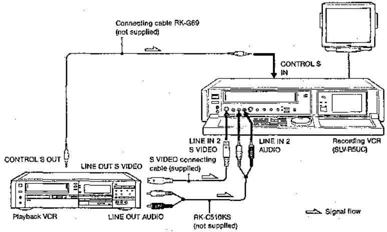
To stop editing
Press the **STOP** button on both VCRs.

To avoid deterioration in picture
When **EDIT ON/OFF** is pressed and the EDIT indicator lights, the deterioration in picture can be reduced.
When **SYNCHRO EDIT** on this VCR is pressed, the EDIT function is automatically activated.

Note
Do not operate the buttons on the VCRs or Commander during editing. Otherwise, a malfunction may occur.

Editing a Home Movie Tape from Another VCR: Connecting a VCR with a CONTROL S Out Jack and Synchro Edit function

Example: From a Sony Betamax VCR to this VCR


Connecting cable RK-G69
(not supplied)
CONTROL S
IN
LINE IN 2
S VIDEO
LINE IN 2
AUDIO
Recording VCR
(SLV-R5UC)
CONTROL S OUT
LINE OUT S VIDEO
S VIDEO connecting
cable (supplied)
Playback VCR
LINE OUT AUDIO
RK-C510KS
(not supplied)
Signal flow

- Before operation, see "Before you begin" on page 70.

Operation

1 Turn on the power of the playback VCR and insert a source tape.
Activate the EDIT function if the VCR has it.

2 Insert a tape for recording into this VCR.

3 Locate the edit start point on this VCR and set it to the recording pause mode.

4 Locate the playback start point on the playback VCR and set it to the playback pause mode.

5 Press the **SYNCHRO EDIT** button on the playback VCR.
The other VCR starts playback and this VCR starts recording.

6 Press the **SYNCHRO EDIT** button on the playback VCR at the edit end point.
The playback VCR enters the playback pause mode and this VCR enters recording pause mode.

To edit the next scene
Repeat steps 4 to 6.

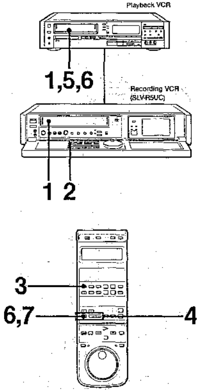
When editing is completed
Press the **STOP** button on both VCRs.

Setting of COMMAND MODE
Set COMMAND MODE on this VCR to VTR 1 or VTR 2. Otherwise, this VCR cannot be operated. When using the Remote Commander, set COMMAND MODE on the Commander to VTR 1 or VTR 2, also.

Manual Assemble Editing with a VCR without a Control Terminal

- For connection, see page 73. (The CONTROL S connection is not needed.)
- See "Before you begin" on page 70.

Example: From a Sony Betamax VCR to this VCR

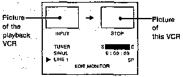

Playback VCR
1,5,6
Recording VCR
(SLV-R5UC)
1
2
3
6,7
4

Operation

1 Insert a source tape into the playback VCR and a tape for recording into this VCR.

2 Press **EDIT ON/OFF**.
The EDIT indicator lights.

3 Press **EDIT MONITOR**.


Picture of the playback VCR
INPUT
STOP
Picture of this VCR
TUNER
SIMUL
▶ LINE 1
S
E
0:00:00
SP
EDIT MONITOR

4 On this VCR, locate the recording starting point and set the VCR to the recording pause mode.

5 On the playback VCR, locate the point where you wish to start editing and set the VCR to the playback pause mode.

6 Press the **PAUSE** button on both VCRs simultaneously to start editing.

7 Press **II PAUSE** on this VCR to stop editing.

To edit the next desired scene
Repeat steps 5 to 7.

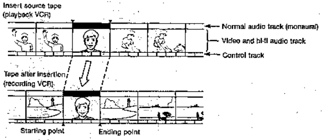
To stop editing
Press the **STOP** button on both VCRs.

Insert Editing

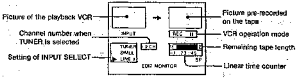
Inserting a New Scene onto a Pre-recorded Tape

You can easily insert a new picture and/or sound onto a pre-recorded tape. "Audio insert", "Video insert", or "Audio and video insert" can be selected with this operation. This editing is useful to replace an unnecessary scene (sound) with another scene (sound).

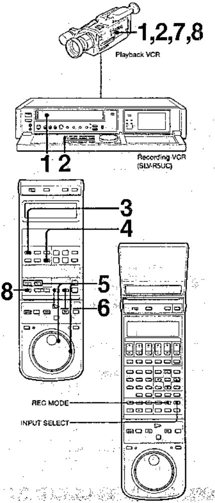
- •For connection, see page 72 or 73. (The CONTROL L and CONTROL S connections are not needed.)
- •Select the insert source from the equipment connected to LINE IN 1 or 2.


Insert source tape
(playback VCR)
Normal audio track (monaural)
Video and hi-fi audio track
Control track
Tape after insertion
(recording VCR)
Starting point
Ending point

EDIT MONITOR display


Picture of the playback VCR
Channel number when TUNER is selected
Setting of INPUT SELECT
INPUT
TUNER
SIMUL
LINE 1
12CH
REC II
-1 23:45
SP
EDIT MONITOR
Picture pre-recorded on the tape
VCR operation mode
Remaining tape length
Linear time counter

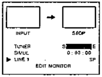
Example: From an 8 mm video camera recorder to this VCR


1,2,7,8
Playback VCR
Recording VCR (SLV-R5UC)
1
2
3
4
5
6
8
REC MODE
INPUT SELECT

1 Insert a source tape into the playback VCR and a tape for recording into this VCR.

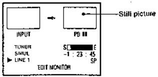
2 Press **EDIT ON/OFF.**
Activate the edit function if the playback VCR has it.

3 Press **EDIT MONITOR.**

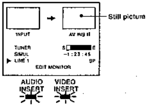

INPUT
STOP
TUNER
SIMUL
▶ LINE 1
S E
0 : 00 : 00
SP
EDIT MONITOR

4 On this recording VCR, locate the ending point and press **COUNTER RESET.**
The counter will show "0H00M00S" and the ending point will be memorized.

5 On the recording VCR, rewind the tape to locate the starting point and set the VCR to the playback pause mode.
JOG/SHUTTLE or **SHUTTLE EDIT** is useful for searching a desired point.

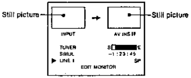

Still picture
INPUT
PB ❚❚
TUNER
SIMUL
▶ LINE 1
S E
-1 : 23 : 45
SP
EDIT MONITOR

6 Press **VIDEO/AUDIO INSERT.**
For audio insert, press **AUDIO.**
For video insert, press **VIDEO.**
For audio and video insert, press the **AUDIO** and then **VIDEO.**


Still picture
INPUT
AV INS ❚❚
TUNER
SIMUL
▶ LINE 1
S E
-1 : 23 : 45
SP
EDIT MONITOR
AUDIO INSERT
VIDEO INSERT

The indicator corresponding to the button pressed will light.

7 On the playback VCR, locate the starting point where you want to start the insertion and set the VCR to the playback pause mode.


Still picture
Still picture
INPUT
AV INS ❚❚
TUNER
SIMUL
▶ LINE 1
S E
-1 : 23 : 45
SP
EDIT MONITOR

8 Press the **PAUSE** button on both VCRs to start the insertion.
At the ending point (0H00M00S), the insertion will stop automatically. (To stop playback, press the STOP button.)

Notes on when INSERT is pressed

When VIDEO INSERT is pressed
The picture and the hi-fi sound will be inserted. (The monaural sound will be retained.)

When AUDIO INSERT is pressed
The monaural sound will be inserted. (The picture and the hi-fi sound will be retained.)

When VIDEO and AUDIO INSERT are pressed
The picture, hi-fi sound and monaural sound will be inserted.

To stop the insertion temporally
Press ❚❚ PAUSE.

To stop on-going insertion
Press ■ STOP.

To turn off the editing display
Press EDIT MONITOR.

When the sound from the microphone is inserted
When the microphone is connected to MIC jack, the sound from the microphone is automatically selected and it is recorded on the normal audio track. When **VIDEO INSERT** is pressed, the sound from the microphone cannot be recorded.

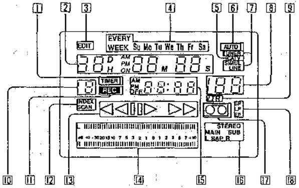
Note
If you turn off the SLV-R5UC with the microphone connected, and then turn it on again, the sound selected with INPUT SELECT will be heard.
To again hear the sound with the use of the microphone, press AUDIO MONITOR on the Commander or unplug the microphone and then connect it to the MIC jack.

Note
A MIC jack of the SLV-R5UC is adaptable with the use of a monaural mini plug. If the plug used for your microphone is a stereo mini type, use a plug adaptor such as the PC-236MS or the PC-236HMS.

Notes
- The insertion cannot be made onto the unrecorded portion of a tape.
- After the insertion, the previous picture and/or sound will be erased.

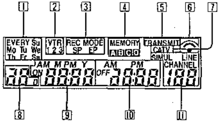
Indicators in the Display Window

Indicators in the Display Window on the VCR


1
2
3
4
5
6
7
8
9
EDIT
EVERY
WEEK Su Mo Tu We Th Fr Sa
AUTO
TUNER
CATV
SIMUL
LINE
D
H
AM
PM
ON
M
S
TIMER
REC
AM
PM
OFF
INDEX
SCAN
STEREO
MAIN SUB
SAP R
SP
LP
EP
L
R
10
11
12
13
14
15
16
17
18

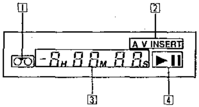
1 TIMER recording indicator
2 Linear time counter and turn-on time of timer recording
3 EDIT indicator
4 Day of the week indicator, every week indicator for timer recording
5 CATV indicator
6 Automatic function indicator
7 Input mode indicators
8 Channel number and input mode
9 VTR indicator
10 INDEX number, program number for timer recording
11 REC (recording) indicator
12 INDEX, INDEX SCAN indicator
13 Tape transport indicator
14 Peak program meter
15 Current time, turn-off time of timer recording, and quick timer recording time
16 Stereo program/SAP indicator
17 Cassette indicator
18 Tape speed indicator (LP is for playback only)

Indicators in the LCD Window on the Commander


1
2
3
4
5
6
7
EVERY Su
Mo Tu We
Th Fr Sa
VTR
1 2 3
REC MODE
SP EP
MEMORY
A B C D
TRANSMIT
CATV
SIMUL LINE
AM M PM Y
ON
D
AM PM
OFF
CHANNEL
8
9
10
11

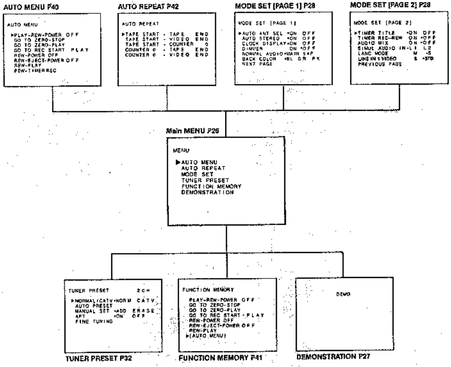
1 Day of the week indicator
2 Command mode indicator
3 Tape speed indicator
4 Memory indicator
5 TRANSMIT indicator
Blinks when all of the items for clock setting or timer recording have been set. Turns off when you press TRANS.
6 Transmission indicator
Lights momentarily when you press TRANS.
7 CATV indicator
8 Date indicator
9 Turn-on time of timer recording
10 Current time, turn-off time of timer recording
11 Input mode indicator and channel position indicator

Indicators in the LCD Window on the Front Panel of the VCR


1
2
A V INSERT
H
M
S
3
4

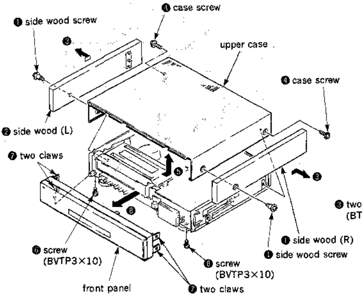
1 Cassette indicator
2 Audio/video insert indicator
3 Linear time counter
4 Tape operation indicator (play and pause)

MENU Displays

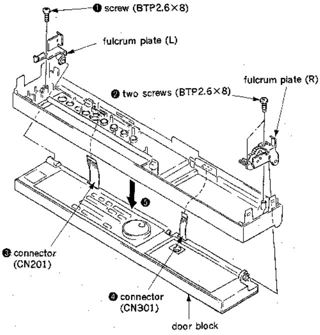

AUTO MENU P40
AUTO MENU
▶PLAY-REW-POWER OFF
GO TO ZERO-STOP
GO TO ZERO-PLAY
GO TO REC START PLAY
REW-POWER OFF
REW-EJECT-POWER OFF
REW-PLAY
REW-TIMER REC
AUTO REPEAT P42
AUTO REPEAT
▶TAPE START - TAPE END
TAPE START - VIDEO END
TAPE START - COUNTER 0
COUNTER 0 - TAPE END
COUNTER 0 - VIDEO END
MODE SET [PAGE 1] P28
MODE SET [PAGE 1]
▶AUTO ANT SEL •ON OFF
AUTO STEREO •ON OFF
CLOCK DISPLAY•ON OFF
DIMMER ON •OFF
NORMAL AUDIO•MAIN SAP
BACK COLOR •BL GR PK
NEXT PAGE
MODE SET [PAGE 2] P28
MODE SET [PAGE 2]
▶TIMER TITLE •ON OFF
TIMER REC→REW ON •OFF
AUDIO MIX ON •OFF
SIMUL AUDIO IN•L1 L2
LANC MODE M •S
LINE IN S VIDEO S •STD
PREVIOUS PAGE
Main MENU P26
MENU
▶AUTO MENU
AUTO REPEAT
MODE SET
TUNER PRESET
FUNCTION MEMORY
DEMONSTRATION
TUNER PRESET 2CH
▶NORMAL/CATV•NORM CATV
AUTO PRESET
MANUAL SET •ADD ERASE
AFT •ON OFF
FINE TUNING
TUNER PRESET P32
FUNCTION MEMORY
PLAY-REW-POWER OFF
GO TO ZERO-STOP
GO TO ZERO-PLAY
GO TO REC START-PLAY
REW-POWER OFF
REW-EJECT-POWER OFF
REW-PLAY
▶[AUTO MENU]
FUNCTION MEMORY P41
DEMO
DEMONSTRATION P27

SECTION 3
DISASSEMBLY

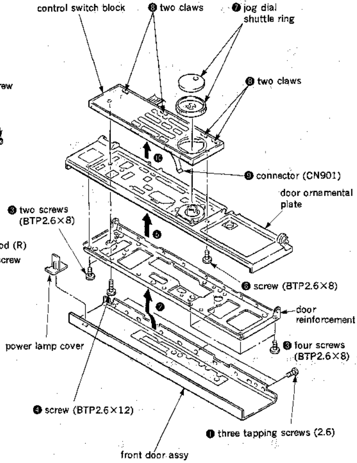
3-1. REMOVAL OF UPPER COVER AND FRONT PANEL


❹ case screw
❶ side wood screw
❸
upper case
❹ case screw
❷ side wood (L)
❼ two claws
❺
❸
❽
❻ screw
(BVTP3×10)
❶ side wood (R)
❶ side wood screw
❻ screw
(BVTP3×10)
front panel
❼ two claws

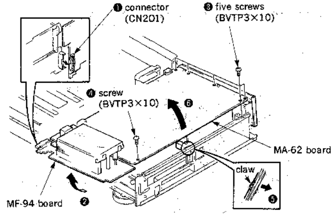
3-2. REMOVAL OF DOOR BLOCK


❶ screw (BTP2.6×8)
fulcrum plate (L)
fulcrum plate (R)
❷ two screws (BTP2.6×8)
❺
❸ connector
(CN201)
❹ connector
(CN301)
door block

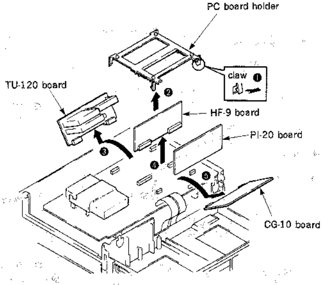
3-3. REMOVAL OF CONTROL SWITCH BLOCK


control switch block
❽ two claws
❼ jog dial
shuttle ring
❽ two claws
❿
❾ connector (CN901)
door ornamental
plate
❸ two screws
(BTP2.6×8)
❺
❻ screw (BTP2.6×8)
❷
door
reinforcement
power lamp cover
❸ four screws
(BTP2.6×8)
❹ screw (BTP2.6×12)
❶ three tapping screws (2.6)
front door assy

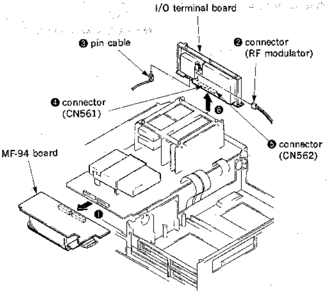
3-4. OPENING THE MA-62 BOARD


❶ connector (CN201)
❸ five screws (BVTP3×10)
❹ screw (BVTP3×10)
❻
MA-62 board
claw
❺
MF-94 board
❷

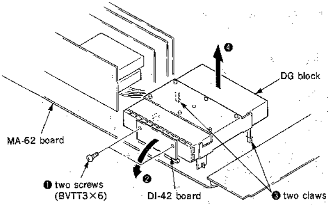
3-6. REMOVAL OF TU-120 BOARD, HF-9 BOARD AND CG-10 BOARD

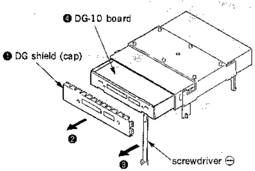

PC board holder
claw ❶
TU-120 board
❷
HF-9 board
PI-20 board
❸
❹
❺
CG-10 board

3-5. REMOVAL OF MF-94 BOARD AND I/O TERMINAL BOARD BLOCK

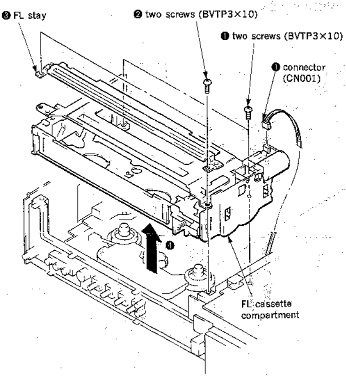

I/O terminal board
❸ pin cable
❷ connector (RF modulator)
❹ connector (CN561)
❻
❺ connector (CN562)
MF-94 board
❶

3-7. REMOVAL OF DG BLOCK (DG-10 BOARD)

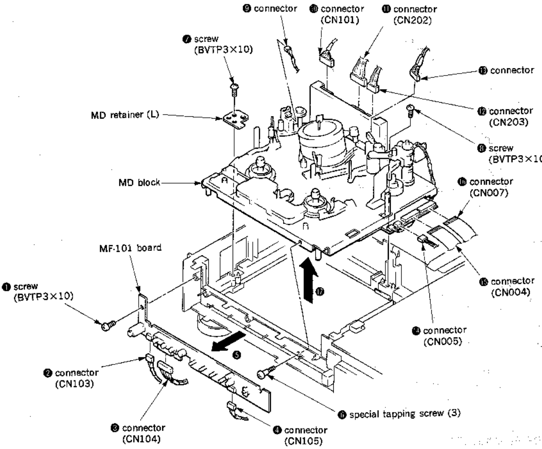

❹
DG block
MA-62 board
❷
❶ two screws
(BVTT3×6)
DI-42 board
❸ two claws


❹ DG-10 board
❶ DG shield (cap)
❷
❸
screwdriver ⊖

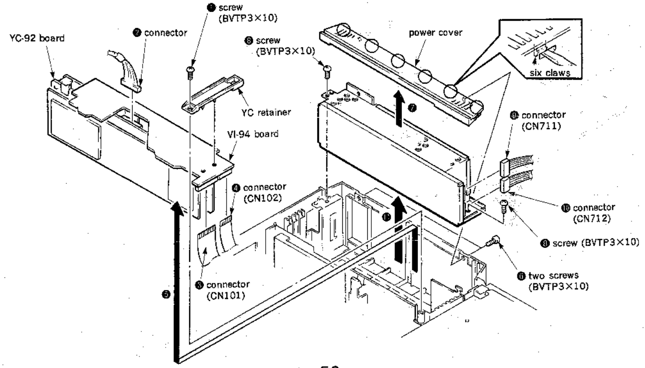
3-8. REMOVAL OF FL CASSETTE COMPARTMENT


❸ FL stay
❷ two screws (BVTP3×10)
❶ two screws (BVTP3×10)
❶ connector
(CN001)
❹
FL cassette
compartment

3-9. REMOVAL OF MECHANISM DECK AND MF-92 BOARD

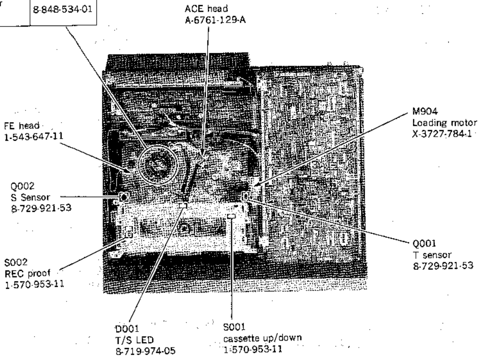

❾ connector
❿ connector (CN101)
⓫ connector (CN202)
❼ screw (BVTP3×10)
⓭ connector
MD retainer (L)
⓬ connector (CN203)
❽ screw (BVTP3×10)
MD block
⓮ connector (CN007)
MF-101 board
❶ screw (BVTP3×10)
⓯ connector (CN004)
⓱
⓰ connector (CN005)
❺
❷ connector (CN103)
❻ special tapping screw (3)
❸ connector (CN104)
❹ connector (CN105)

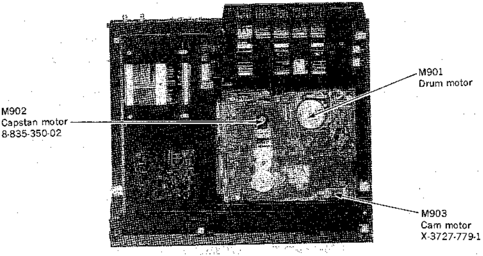
3-10. REMOVAL OF VI-94 BOARD, YC BLOCK AND SWITCHING BLOCK


❶ screw (BVTP3×10)
YC-92 board
❷ connector
❽ screw (BVTP3×10)
power cover
six claws
YC retainer
❼
VI-94 board
❾ connector (CN711)
❹ connector (CN102)
⓫
❿ connector (CN712)
❽ screw (BVTP3×10)
❻ two screws (BVTP3×10)
❸ connector (CN101)
❺

3-11. INTERNAL VIEWS

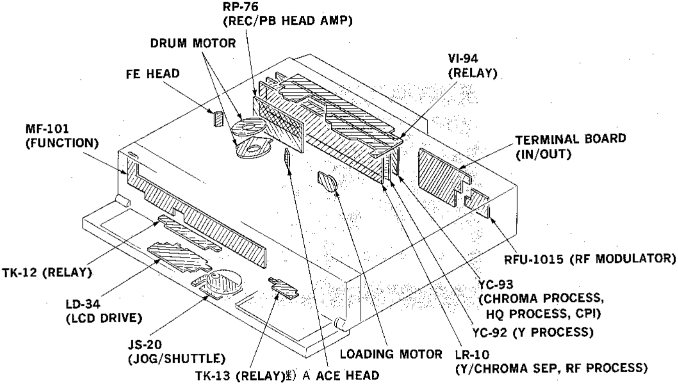
Drum ASSY (DZH-18A-R)	8-848-531-11
Drum upper (DZR-18-R)	8-848-534-01

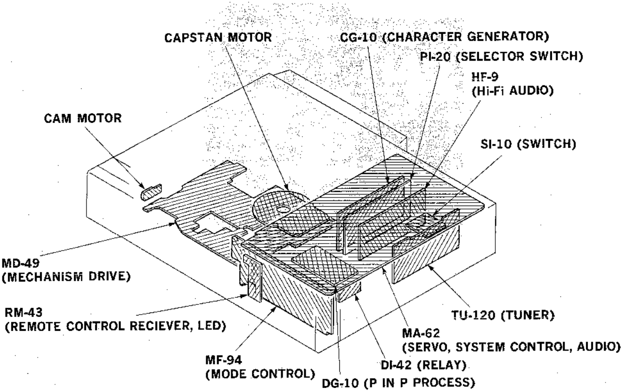

ACE head
A-6761-129-A
FE head
1-543-647-11
M904
Loading motor
X-3727-784-1
Q002
S Sensor
8-729-921-53
Q001
T sensor
8-729-921-53
S002
REC proof
1-570-953-11
D001
T/S LED
8-719-974-05
S001
cassette up/down
1-570-953-11


M901
Drum motor
M902
Capstan motor
8-835-350-02
M903
Cam motor
X-3727-779-1

SECTION 4
DIAGRAMS

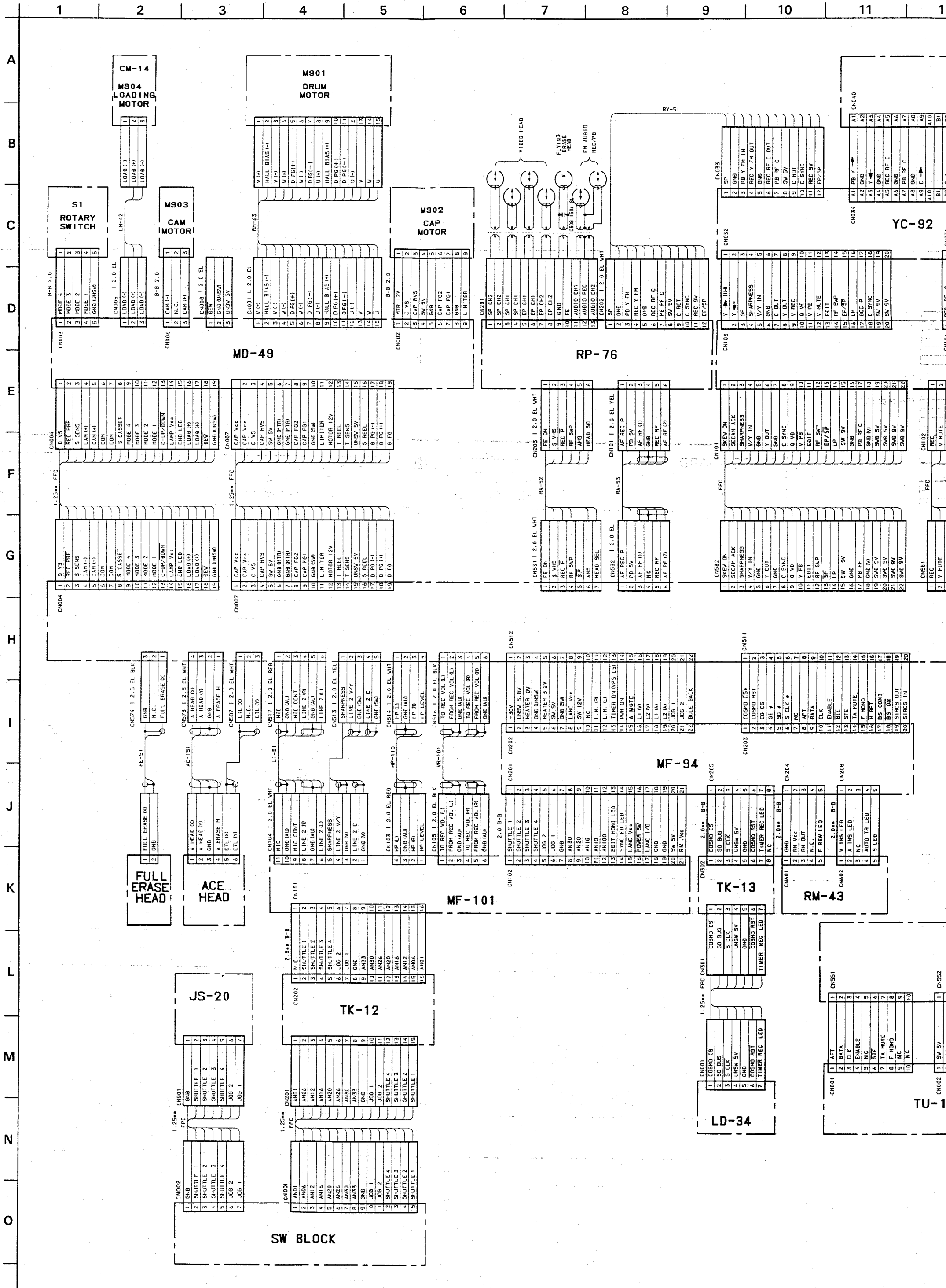
4-1. CIRCUIT BOARDS LOCATION


RP-76
(REC/PB HEAD AMP)
DRUM MOTOR
FE HEAD
VI-94
(RELAY)
MF-101
(FUNCTION)
TERMINAL BOARD
(IN/OUT)
RFU-1015 (RF MODULATOR)
TK-12 (RELAY)
LD-34
(LCD DRIVE)
YC-93
(CHROMA PROCESS,
HQ PROCESS, CPI)
YC-92 (Y PROCESS)
JS-20
(JOG/SHUTTLE)
LOADING MOTOR
LR-10
(Y/CHROMA SEP, RF PROCESS)
TK-13 (RELAY)※) A ACE HEAD

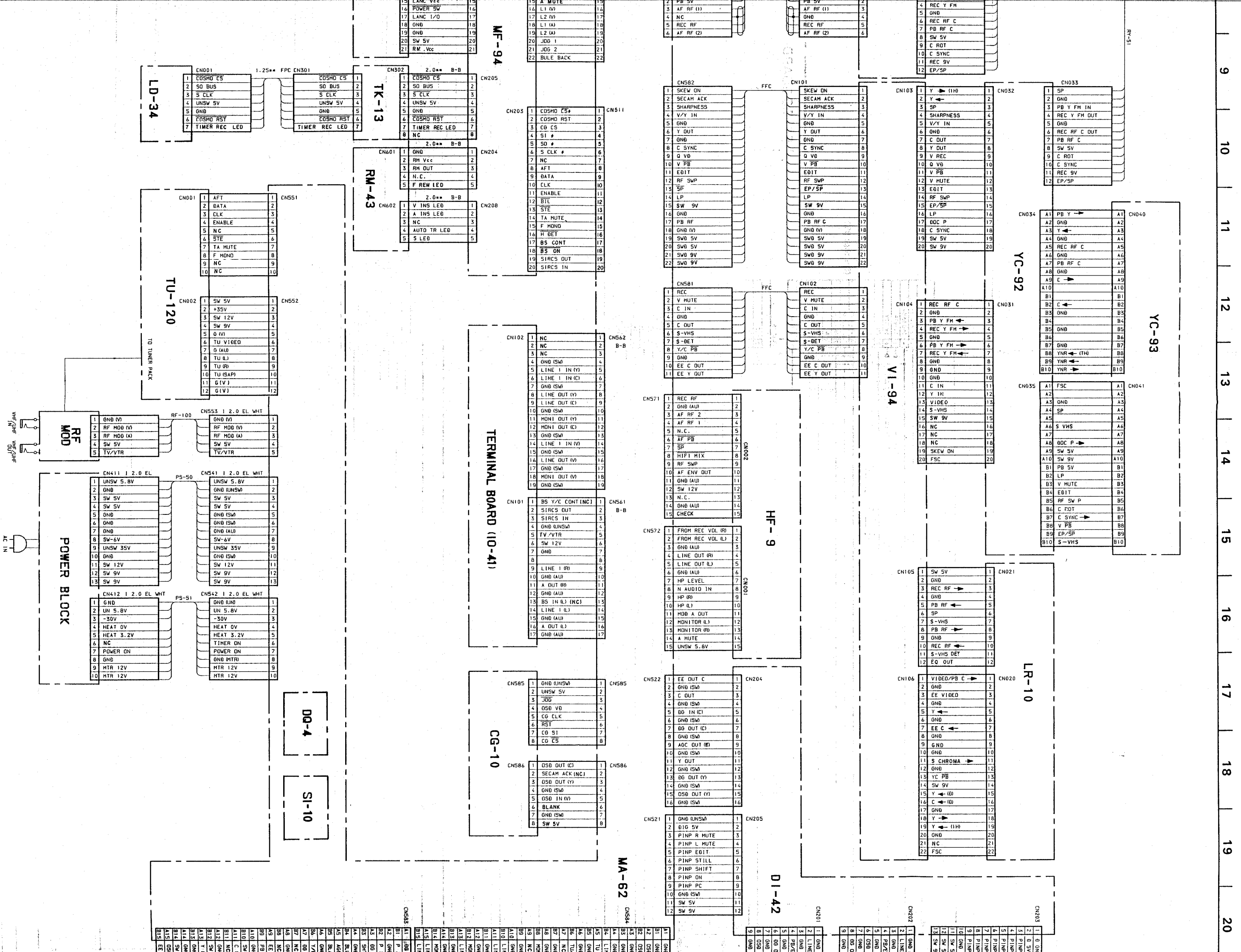

CAPSTAN MOTOR
CG-10 (CHARACTER GENERATOR)
PI-20 (SELECTOR SWITCH)
HF-9
(Hi-Fi AUDIO)
CAM MOTOR
SI-10 (SWITCH)
MD-49
(MECHANISM DRIVE)
RM-43
(REMOTE CONTROL RECIEVER, LED)
TU-120 (TUNER)
MA-62
(SERVO, SYSTEM CONTROL, AUDIO)
MF-94
(MODE CONTROL)
DI-42 (RELAY)
DG-10 (P IN P PROCESS)

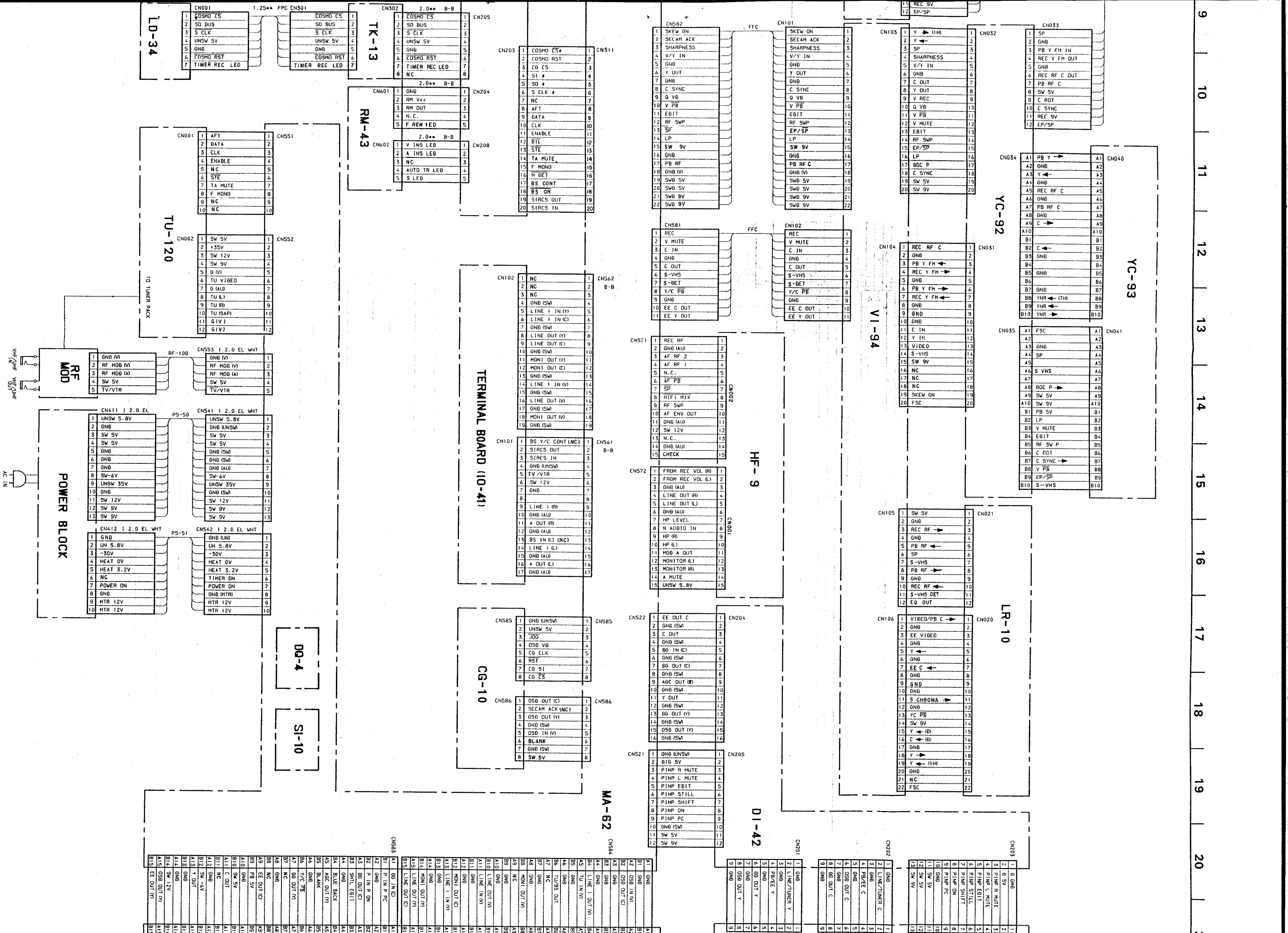
SECTION 5
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

5-1. FRAME SCHEMATIC DIAGRAM



CM-14
M904 LOADING MOTOR
M901 DRUM MOTOR
S1 ROTARY SWITCH
M903 CAM MOTOR
M902 CAP MOTOR
VIDEO HEAD
FLYING ERASE HEAD
FM AUDIO REC/PB
YC-92
MD-49
RP-76
MF-94
FULL ERASE HEAD
ACE HEAD
MF-101
TK-13
RM-43
JS-20
TK-12
LD-34
TU-1
SW BLOCK
LM-42
RM-63
RY-51
RA-52
RA-53
FE-51
AC-151
LI-51
HP-110
VR-101
1.25mm FFC
1.25mm FPC


LD-34
CN001
1.25mm FPC
CN301
TK-13
CN302
2.0mm B-B
CN205
RM-43
CN601
CN204
CN602
CN208
MF-94
CN203
CN511
TU-120
TO TUNER PACK
CN001
CN551
CN002
CN552
RF MOD
VHF/UHF IN
VHF/UHF OUT
RF-100
CN553 I 2.0 EL WHT
POWER BLOCK
AC IN
CN411 I 2.0 EL
PS-50
CN541 I 2.0 EL WHT
CN412 I 2.0 EL WHT
PS-51
CN542 I 2.0 EL WHT
DQ-4
SI-10
TERMINAL BOARD (IO-41)
CN102
CN562 B-B
CN101
CN561 B-B
CG-10
CN585
CN586
MA-62
CN583
CN584
CN582
FFC
CN101
CN581
CN102
VI-94
CN571
CN002
CN572
CN001
HF-9
CN522
CN204
CN521
CN205
DI-42
CN201
CN202
CN203
CN103
CN032
CN033
YC-92
CN034
CN040
YC-93
CN104
CN031
CN035
CN041
CN105
CN021
CN106
CN020
LR-10
RY-51
9
10
11
12
13
14
15
16
17
18
19
20


LD-34
CN001
COSMO CS
SO BUS
S CLK
UNSW 5V
GND
COSMO RST
TIMER REC LED
1.25mm FPC CN301
TK-13
CN302
2.0mm B-B
CN205
NC
RM-43
CN601
CN204
RM Vcc
RM OUT
N.C.
F REW LED
CN602
CN208
V INS LED
A INS LED
AUTO TR LED
S LED
CN203
CN511
CG CS
SI
SO
AFT
DATA
CLK
ENABLE
BIL
STE
TA MUTE
F MONO
H DET
BS CONT
BS ON
SIRCS OUT
SIRCS IN
TU-120
CN001
CN551
CN002
CN552
SW 5V
+35V
SW 12V
SW 9V
G (V)
TU VIDEO
G (AU)
TU (L)
TU (R)
TU (SAP)
TO TUNER PACK
RF MOD
VHF/UHF IN
VHF/UHF OUT
RF-100
CN553 1 2.0 EL WHT
GND (V)
RF MOD (V)
RF MOD (A)
TV/VTR
POWER BLOCK
AC IN
CN411 1 2.0 EL
PS-50
CN541 1 2.0 EL WHT
UNSW 5.8V
GND (UNSW)
GND (SW)
GND (AU)
SW-6V
UNSW 35V
CN412 1 2.0 EL WHT
PS-51
CN542 1 2.0 EL WHT
GND (UN)
UN 5.8V
-30V
HEAT 0V
HEAT 3.2V
TIMER ON
POWER ON
GND (MTR)
MTR 12V
DQ-4
SI-10
TERMINAL BOARD (IO-41)
CN102
CN562 B-B
LINE 1 IN (Y)
LINE 1 IN (C)
LINE OUT (Y)
LINE OUT (C)
MONI OUT (Y)
MONI OUT (C)
LINE 1 IN (V)
LINE OUT (V)
MONI OUT (V)
CN101
CN561 B-B
BS Y/C CONT (NC)
GND (UNSW)
LINE 1 (R)
A OUT (R)
BS IN (L) (NC)
LINE 1 (L)
A OUT (L)
CG-10
CN585
UNSW 5V
JOD
OSD VD
CG CLK
RST
CG SI
CG CS
CN586
OSD OUT (C)
SECAM ACK (NC)
OSD OUT (Y)
OSD IN (V)
BLANK
MA-62
CN582
FFC
CN101
SKEW ON
SECAM ACK
SHARPNESS
V/Y IN
Y OUT
C SYNC
Q VD
V PB
EDIT
RF SWP
SP
LP
EP/SP
PB RF
PB RF C
SWD 5V
SWD 9V
CN581
CN102
REC
V MUTE
C IN
C OUT
S-VHS
S-DET
Y/C PB
EE C OUT
EE Y OUT
VI-94
HF-9
CN571
CN002
REC RF
AF RF 2
AF RF 1
AF PB
HIFI MIX
AF ENV OUT
CHECK
CN572
CN001
FROM REC VOL (R)
FROM REC VOL (L)
LINE OUT (R)
LINE OUT (L)
HP LEVEL
N AUDIO IN
HP (R)
HP (L)
MOD A OUT
MONITOR (L)
MONITOR (R)
A MUTE
DI-42
CN522
CN204
EE OUT C
DG IN (C)
DG OUT (C)
AGC OUT (Y)
DG OUT (Y)
CN521
CN205
DIG 5V
PINP R MUTE
PINP L MUTE
PINP EDIT
PINP STILL
PINP SHIFT
PINP ON
PINP PC
REC 9V
CN103
CN032
Y → (TH)
Y ←
V REC
DOC P
CN033
PB Y FM IN
REC Y FM OUT
REC RF C OUT
C ROT
YC-92
YC-93
CN034
CN040
PB Y →
Y ←
REC RF C
C →
C ←
YNR ← (TH)
YNR ←
YNR →
CN035
CN041
FSC
S VHS
DOC P →
PB 5V
RF SW P
C SYNC →
CN104
CN031
PB Y FM ←
REC Y FM →
PB Y FM →
REC Y FM ←
Y IN
VIDEO
LR-10
CN105
CN021
REC RF →
PB RF ←
PB RF →
REC RF ←
S-VHS DET
EQ OUT
CN106
CN020
VIDEO/PB C →
EE VIDEO
EE C ←
S CHROMA →
YC PB
Y ← (D)
C ← (D)
Y →
Y ← (TH)
CN583
DG IN (C)
P IN P PC
P IN P ON
SHTL EDIT
BLUE BACK
NC
PB 5V
SW 5V
SW -6V
EE OUT (C)
EE OUT (Y)
OSD OUT (Y)
CN584
LINE OUT (C)
LINE OUT (Y)
MONI OUT (Y)
LINE 1 IN (Y)
MONI OUT (C)
LINE IN (V)
LINE OUT (V)
MONI OUT (V)
TU/BS OUT
TU IN (V)
LINE 1 OUT (V)
OSD OUT (C)
OSD IN (V)
CN201
LINE/TUNER Y
PB/EE Y
Y
OSD OUT Y
CN202
LINE/TUNER C
PB/EE C
C
OSD OUT C
CN203
D GND
D 5V
9
10
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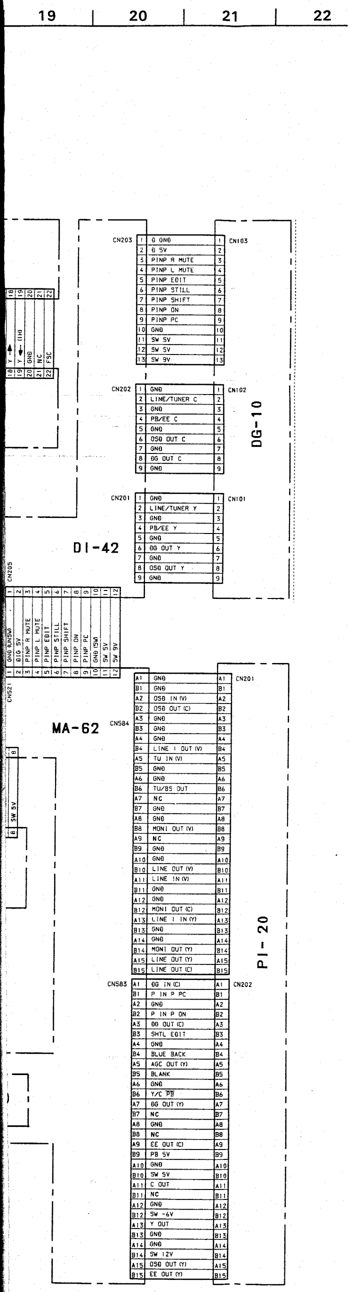
20


19
20
21
22
CN203
CN103
1 D GND
2 D 5V
3 PINP R MUTE
4 PINP L MUTE
5 PINP EDIT
6 PINP STILL
7 PINP SHIFT
8 PINP ON
9 PINP PC
10 GND
11 SW 5V
12 SW 5V
13 SW 9V
18 Y →
19 Y ← (H)
20 GND
21 NC
22 FSC
CN202
CN102
1 GND
2 LINE/TUNER C
3 GND
4 PB/EE C
5 GND
6 OSD OUT C
7 GND
8 DG OUT C
9 GND
DG-10
CN201
CN101
1 GND
2 LINE/TUNER Y
3 GND
4 PB/EE Y
5 GND
6 DG OUT Y
7 GND
8 OSD OUT Y
9 GND
DI-42
CN521
CN205
1 GND (UNSW)
2 DIG 5V
3 PINP R MUTE
4 PINP L MUTE
5 PINP EDIT
6 PINP STILL
7 PINP SHIFT
8 PINP ON
9 PINP PC
10 GND (SW)
11 SW 5V
12 SW 9V
MA-62
8 SW 5V 8
CN584
CN201
A1 GND
B1 GND
A2 OSD IN (V)
B2 OSD OUT (C)
A3 GND
B3 GND
A4 GND
B4 LINE 1 OUT (V)
A5 TU IN (V)
B5 GND
A6 GND
B6 TU/BS OUT
A7 NC
B7 GND
A8 GND
B8 MONI OUT (V)
A9 NC
B9 GND
A10 GND
B10 LINE OUT (V)
A11 LINE IN (V)
B11 GND
A12 GND
B12 MONI OUT (C)
A13 LINE 1 IN (Y)
B13 GND
A14 GND
B14 MONI OUT (Y)
A15 LINE OUT (Y)
B15 LINE OUT (C)
PI-20
CN583
CN202
A1 DG IN (C)
B1 P IN P PC
A2 GND
B2 P IN P ON
A3 DG OUT (C)
B3 SHTL EDIT
A4 GND
B4 BLUE BACK
A5 AGC OUT (Y)
B5 BLANK
A6 GND
B6 Y/C PB
A7 DG OUT (Y)
B7 NC
A8 GND
B8 NC
A9 EE OUT (C)
B9 PB 5V
A10 GND
B10 SW 5V
A11 C OUT
B11 NC
A12 GND
B12 SW -6V
A13 Y OUT
B13 GND
A14 GND
B14 SW 12V
A15 OSD OUT (Y)
B15 EE OUT (Y)

5-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is is printed in each block.)

● **For printed wiring boards.**

- ● : Through hole.
- ▨ : Pattern from the side which enables seeing.
- ▩ : Pattern of the rear side. *
- Circled numbers refer to waveforms. *

● **For schematic diagram.**

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
- Chip resistor are 1/8W or 1/10W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF : μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊡ : nonflammable resistor.
- ⊡ : fusible resistor.
- ☐ : panel designation.
- △ : internal component.
- ☐ : adjustment for repair. *
- ▬ : B + Line *
- ╌ : B – Line. *
- ⇨ : IN/OUT direction of (+, –) B line. *
- Circled numbers refer to waveforms. *
- Voltages are dc between ground and measurement points. *
- Readings are taken with a color-bar signal input. *
- Readings are taken with a digital multimeter (DC10MΩ). *
- Voltage variations may be noted due to normal production tolerances. *

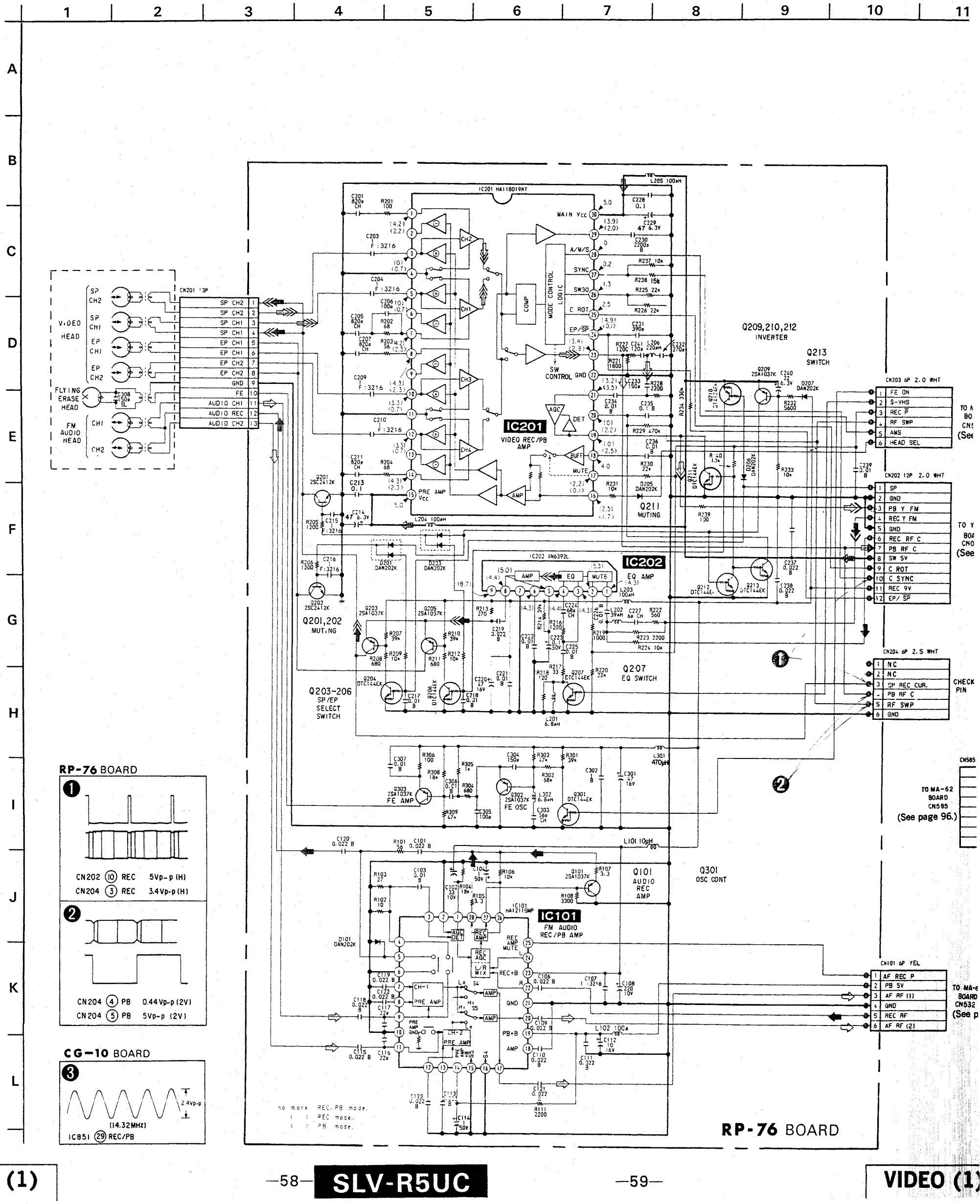
Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

* : indicated by the color red.

CG-10 (CHARACTER GENERATOR), PI-20 (SELECTOR SWITCH), RP-76 (REC/PB HEAD AMP) TERMINAL BOARD SCHEMATIC DIAGRAM

—Ref. No. CG-10 BOARD : 1000 series, PI-20 BOARD : 3000 series, RP-76 BOARD : 7000 series—



1
2
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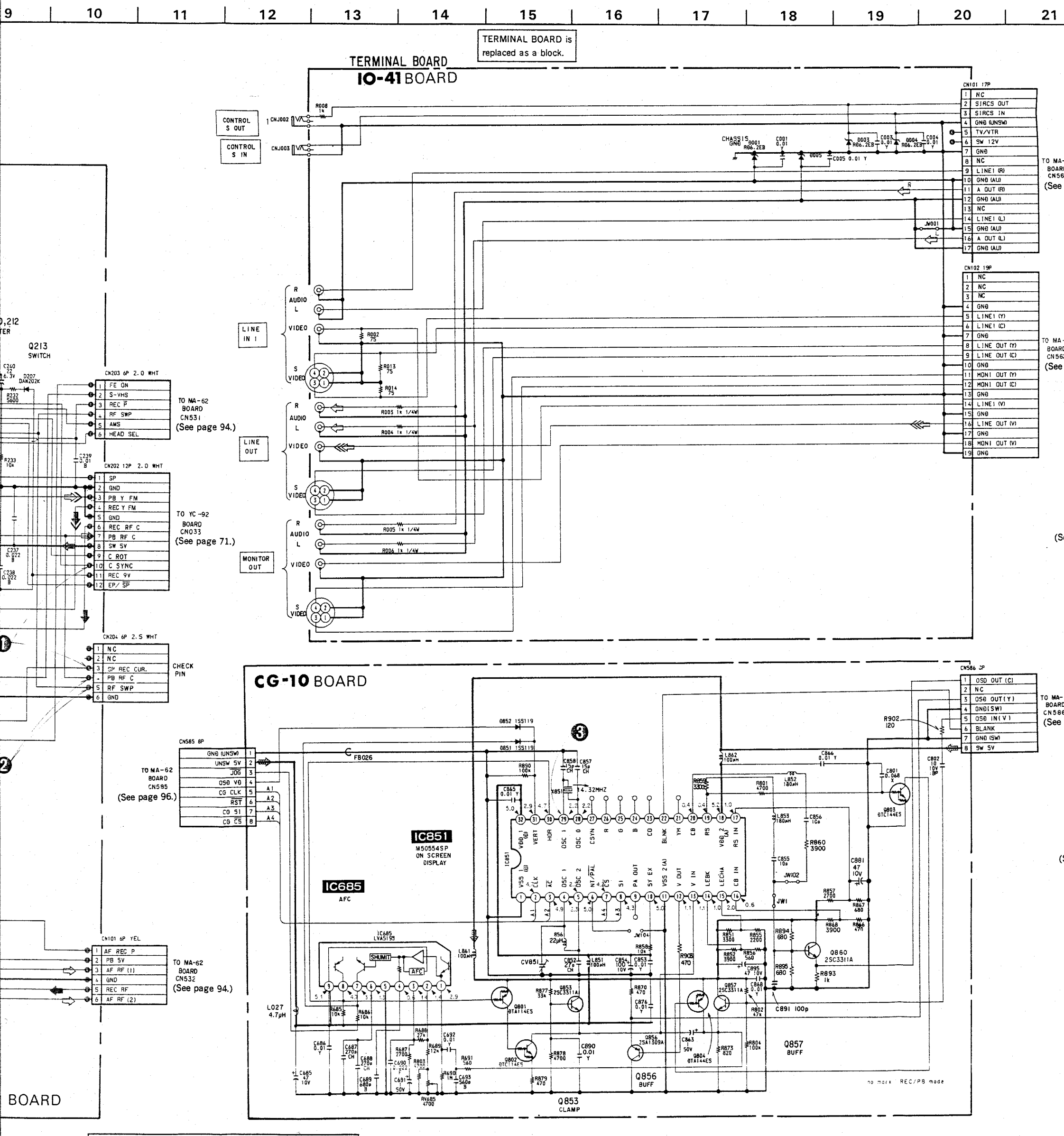
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
VIDEO HEAD
SP CH2
SP CH1
EP CH1
EP CH2
FLYING ERASE HEAD
FM AUDIO HEAD
CH1
CH2
CN201 13P
1 SP CH2
2 SP CH2
3 SP CH1
4 SP CH1
5 EP CH1
6 EP CH1
7 EP CH2
8 EP CH2
9 GND
10 FE
11 AUDIO CH1
12 AUDIO REC
13 AUDIO CH2
IC201 HA118019NT
IC201
VIDEO REC/PB AMP
MAIN Vcc
A/M/S
SYNC
SW30
C ROT
EP/SP
SW CONTROL
GND
COMP
MODE CONTROL LOGIC
AGC
DET
BUFF
MUTE
AMP
PRE AMP Vcc
Q201,202
MUTING
Q203-206
SP/EP SELECT SWITCH
IC202 AN6392L
IC202
EQ AMP
EQ
MUTE
Q207
EQ SWITCH
Q211
MUTING
Q209,210,212
INVERTER
Q213
SWITCH
Q303
FE AMP
Q302
FE OSC
Q301
OSC CONT
IC101 HA12115NP
IC101
FM AUDIO REC/PB AMP
Q101
AUDIO REC AMP
REC AGC
L/R MIX
REC AMP MUTE
PRE AMP
CH-1
CH-2
PB+B
REC+B
CN203 6P 2.0 WHT
1 FE ON
2 S-VHS
3 REC P
4 RF SWP
5 AMS
6 HEAD SEL
CN202 12P 2.0 WHT
1 SP
2 GND
3 PB Y FM
4 REC Y FM
5 GND
6 REC RF C
7 PB RF C
8 SW 5V
9 C ROT
10 C SYNC
11 REC 9V
12 EP/SP
CN204 6P 2.5 WHT
1 NC
2 NC
3 SP REC CUR.
- PB RF C
5 RF SWP
6 GND
CHECK PIN
CN101 6P YEL
1 AF REC P
2 PB 5V
3 AF RF (1)
4 GND
5 REC RF
6 AF RF (2)
TO MA-62 BOARD CN585 (See page 96.)
RP-76 BOARD
❶
CN202 ⑩ REC 5Vp-p (H)
CN204 ③ REC 3.4Vp-p (H)
❷
CN204 ④ PB 0.44Vp-p (2V)
CN204 ⑤ PB 5Vp-p (2V)
CG-10 BOARD
❸
2.4Vp-p
(14.32MHz)
IC851 ㉙ REC/PB
no mark : REC, PB mode.
( ) : REC mode.
〈 〉 : PB mode.
RP-76 BOARD


TERMINAL BOARD is replaced as a block.
TERMINAL BOARD
IO-41 BOARD
CG-10 BOARD
CONTROL S OUT
CONTROL S IN
CNJ002
CNJ003
R008 1k
LINE IN 1
LINE OUT
MONITOR OUT
AUDIO R L
VIDEO
S VIDEO
R002 75
R013 75
R014 75
R003 1k 1/4W
R004 1k 1/4W
R005 1k 1/4W
R006 1k 1/4W
CHASSIS GND
D001 R06.2EB
C001 0.01
D005
C005 0.01 Y
D003 R06.2EB
C003 0.01
D004 R06.2EB
C004 0.01
JW001
CN101 17P
1 NC
2 SIRCS OUT
3 SIRCS IN
4 GND (UNSW)
5 TV/VTR
6 SW 12V
7 GND
8 NC
9 LINE1 (R)
10 GND (AU)
11 A OUT (R)
12 GND (AU)
13 NC
14 LINE1 (L)
15 GND (AU)
16 A OUT (L)
17 GND (AU)
CN102 19P
1 NC
2 NC
3 NC
4 GND
5 LINE1 (Y)
6 LINE1 (C)
7 GND
8 LINE OUT (Y)
9 LINE OUT (C)
10 GND
11 MONI OUT (Y)
12 MONI OUT (C)
13 GND
14 LINE1 (V)
15 GND
16 LINE OUT (V)
17 GND
18 MONI OUT (V)
19 GND
TO MA-62 BOARD CN56
(See
(S
Q213 SWITCH
,212
C240 22 6.3V
D207 DA202K
R232 5600
R233 10k
C239 0.01 B
C237 0.022 B
C238 0.022 B
CN203 6P 2.0 WHT
1 FE ON
2 S-VHS
3 REC P
4 RF SWP
5 AMS
6 HEAD SEL
TO MA-62 BOARD CN531 (See page 94.)
CN202 12P 2.0 WHT
1 SP
2 GND
3 PB Y FM
4 REC Y FM
5 GND
6 REC RF C
7 PB RF C
8 SW 5V
9 C ROT
10 C SYNC
11 REC 9V
12 EP/ SP
TO YC-92 BOARD CN033 (See page 71.)
CN204 6P 2.5 WHT
1 NC
2 NC
3 SP REC CUR.
4 PB RF C
5 RF SWP
6 GND
CHECK PIN
CN101 6P YEL
1 AF REC P
2 PB 5V
3 AF RF (1)
4 GND
5 REC RF
6 AF RF (2)
TO MA-62 BOARD CN532 (See page 94.)
BOARD
CN585 8P
1 GND (UNSW)
2 UNSW 5V
3 JOG
4 OSD VD
5 CG CLK
6 RST
7 CG SI
8 CG CS
TO MA-62 BOARD CN595 (See page 96.)
A1 A2 A3 A4
FB026
IC851 M50554SP ON SCREEN DISPLAY
IC685 AFC
IC685 LVA519S
SHUNT
AFC
L027 4.7μH
D852 1SS119
D851 1SS119
R890 100k
C865 0.01 Y
C858 15p CH
C857 15p CH
X851 14.32MHZ
IC851
1 VSS 1 (D)
2 CLK
3 AC
4 OSC 1
5 OSC 2
6 NT/PAL
7 CS
8 SI
9 PA OUT
10 SY EX
11 VSS 2 (A)
12 V OUT
13 V IN
14 LEBK
15 LECHA
16 CB IN
17 RS IN
18 VDD 2 (A)
19 RS
20 CB
21 YM
22 BLNK
23 CO
24 B
25 G
26 R
27 CSYN
28 OSC 0
29 OSC 1
30 HOR
31 VERT
32 VDD 1 (D)
L862 100μH
C866 0.01 Y
R859 3300
R801 4700
L852 180μH
L853 180μH
C856 10p
R860 3900
C855 10p
JW102
JW1
C881 47 10V
R857 2700
R867 680
R868 3900
R866 470
R894 680
R895 680
Q860 2SC3311A
R893 1k
C891 100p
R802 47k
R804 100k
Q857 BUFF
856 22μH
JW104
CV851
C852 27p CH
L851 100μH
C854 100 10V
C853 0.01
R858 10k
R905 470
R851 3300
R855 2200
R852 3900
R856 560
C895 47 10V
C868 0.01
Q857 2SC3311A
L861 100μH
Q801 DTA114ES
R877 33k
Q853 2SC3311A
R870 470
C876 0.01
C863 50V
Q804 DTA144ES
R873 820
Q856 2SA1309A
Q856 BUFF
R685 10k
R686 10k
C686 0.01 Y
C687 270p CH
C688 270p CH
C689 680p B
C685 47 10V
R688 27k
R687 2700
R689 12k
C692 0.01
C690 0.022
R803 4700
C691 50V
R690 1M
R691 560
C693 560p B
RV685 4700
Q802 DTC114ES
R878 4700
C890 0.01 Y
R879 470
Q853 CLAMP
R902 120
C801 0.068
Q803 DTC144ES
C802 10 10V BP
CN586 8P
1 OSD OUT (C)
2 NC
3 OSD OUT (Y)
4 GND (SW)
5 OSD IN (V)
6 BLANK
7 GND (SW)
8 SW 5V
TO MA- BOARD CN586 (See
no mark : REC/PB mode
9
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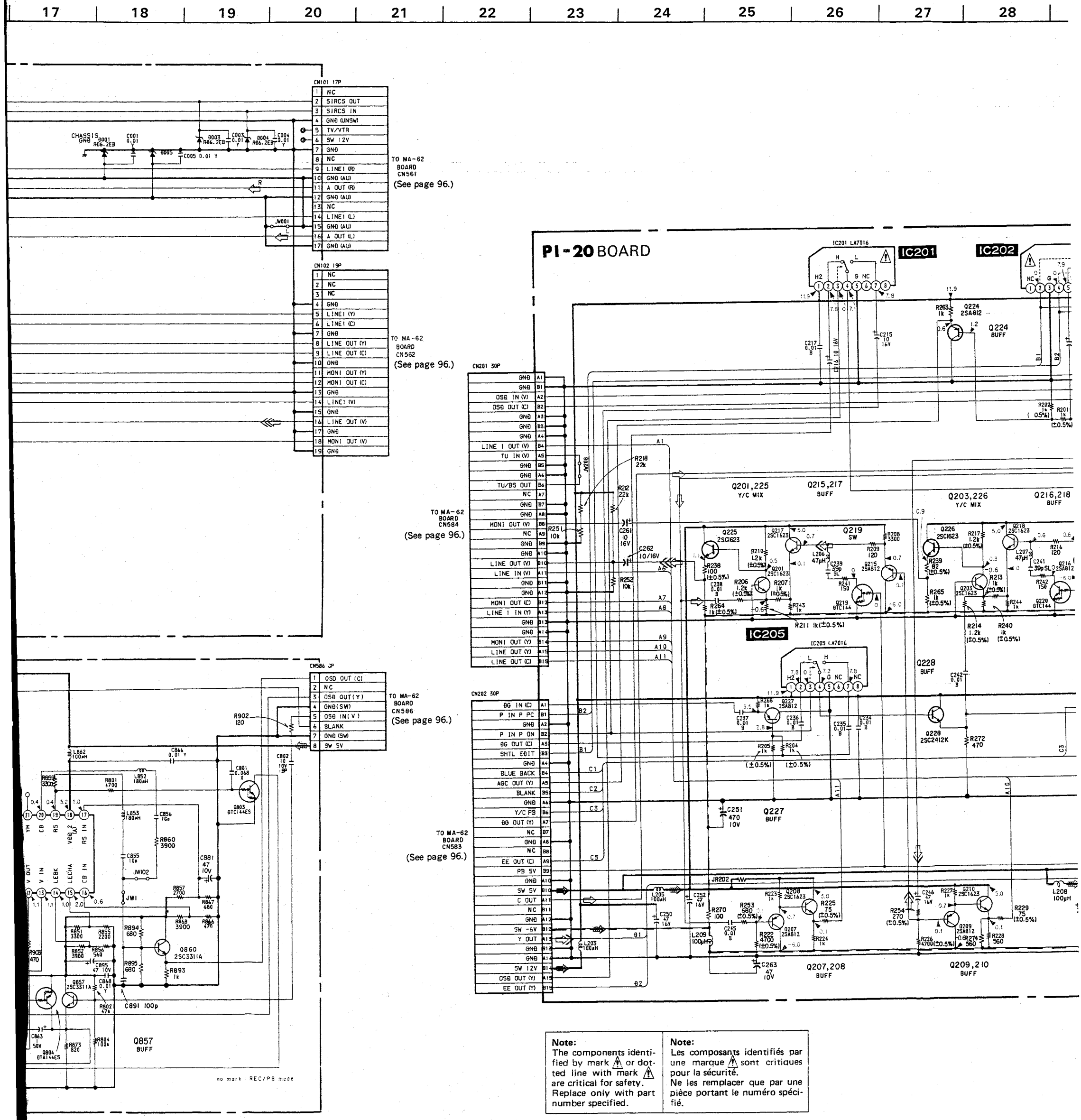
21



17
18
19
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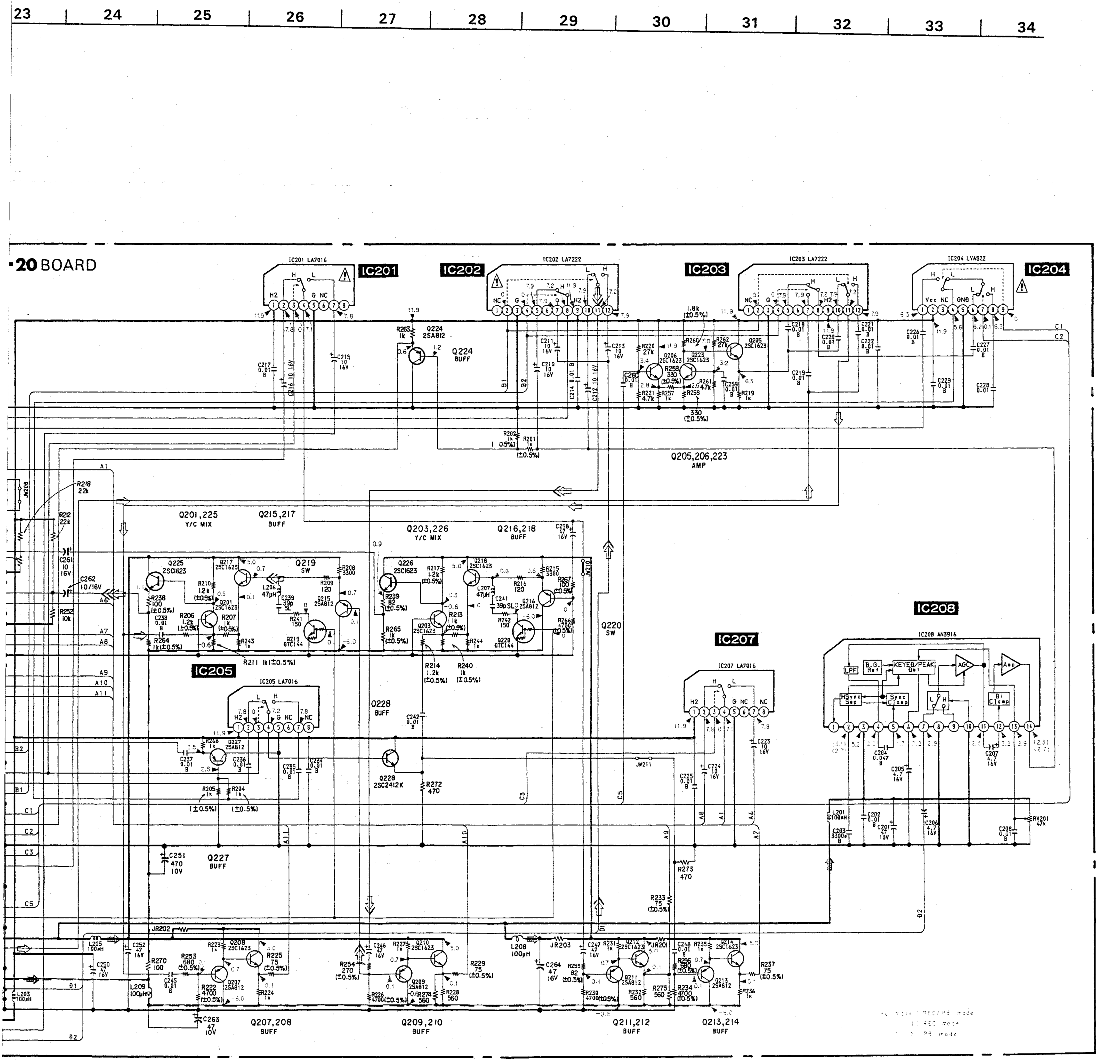
22
23
24
25
26
27
28
PI-20 BOARD
IC201
IC202
IC205
IC201 LA7016
IC205 LA7016
CN101 17P
1 NC
2 SIRCS OUT
3 SIRCS IN
4 GND (UNSW)
5 TV/VTR
6 SW 12V
7 GND
8 NC
9 LINE1 (R)
10 GND (AU)
11 A OUT (R)
12 GND (AU)
13 NC
14 LINE1 (L)
15 GND (AU)
16 A OUT (L)
17 GND (AU)
TO MA-62 BOARD CN561
(See page 96.)
CN102 19P
1 NC
2 NC
3 NC
4 GND
5 LINE1 (Y)
6 LINE1 (C)
7 GND
8 LINE OUT (Y)
9 LINE OUT (C)
10 GND
11 MONI OUT (Y)
12 MONI OUT (C)
13 GND
14 LINE1 (V)
15 GND
16 LINE OUT (V)
17 GND
18 MONI OUT (V)
19 GND
TO MA-62 BOARD CN562
(See page 96.)
CN586 JP
1 OSD OUT (C)
2 NC
3 OSD OUT (Y)
4 GND (SW)
5 OSD IN (V)
6 BLANK
7 GND (SW)
8 SW 5V
TO MA-62 BOARD CN586
(See page 96.)
CN201 30P
TO MA-62 BOARD CN584
(See page 96.)
CN202 30P
TO MA-62 BOARD CN583
(See page 96.)
Q201,225 Y/C MIX
Q215,217 BUFF
Q203,226 Y/C MIX
Q216,218 BUFF
Q219 SW
Q224 BUFF
Q227 BUFF
Q228 BUFF
Q207,208 BUFF
Q209,210 BUFF
Q857 BUFF
Q860 2SC3311A
no mark : REC/PB mode

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.


23
24
25
26
27
28
29
30
31
32
33
34
-20 BOARD
IC201
IC201 LA7016
IC202
IC202 LA7222
IC203
IC203 LA7222
IC204
IC204 LVA522
IC205
IC205 LA7016
IC207
IC207 LA7016
IC208
IC208 AN3916
Q224 BUFF
Q205,206,223 AMP
Q201,225 Y/C MIX
Q215,217 BUFF
Q203,226 Y/C MIX
Q216,218 BUFF
Q219 SW
Q220 SW
Q228 BUFF
Q227 BUFF
Q207,208 BUFF
Q209,210 BUFF
Q211,212 BUFF
Q213,214 BUFF
LPF
B.G. Ref
KEYED/PEAK Det
AGC
Amp
H Sync Sep
Sync Clamp
Dl Clamp
REC/PB mode
REC mode
PB mode

e:
components identi-
by mark ⚠ or dot-
line with mark ⚠
critical for safety.
lace only with part
ber specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

• **Signal path**

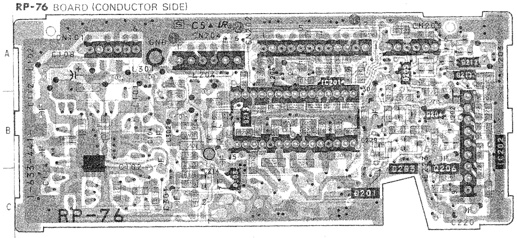
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡>	➡>>	➡
PB	⇨	⇨>	⇨>>	⇨

G-10 (CHARACTER GENERATOR), PI-20 (SELECTOR SWITCH), RP-76 (REC/PB HEAD AMP) PRINTED WIRING BOARDS

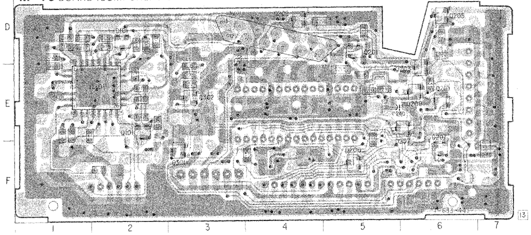
·Ref. No. CG-10 BOARD : 1000 series, PI-20 BOARD : 3000 series, RP-76 BOARD : 7000 series—

RP-76	
D101	D-2
D201	B-5
D203	B-6
D205	A-6
D206	F-5
D207	E-6
IC101	E-2
IC201	B-4
IC202	B-6
Q101	E-2
Q201	D-5
Q202	D-4
Q203	E-6
Q204	B-6
Q205	D-6
Q206	B-6
Q207	F-6
Q209	E-6
Q210	E-6
Q211	A-6
Q212	A-6
Q213	B-3
Q301	F-3
Q302	E-3
Q303	C-3

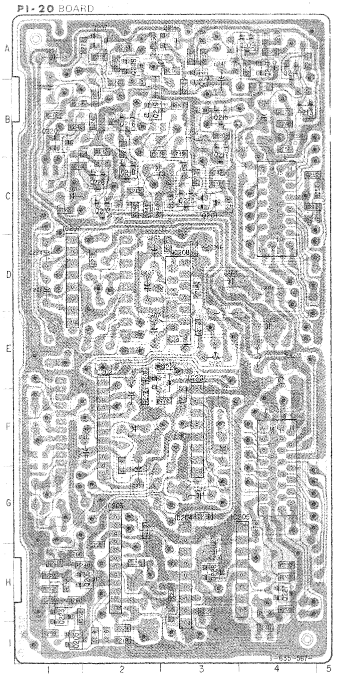
RP-76 BOARD (CONDUCTOR SIDE)

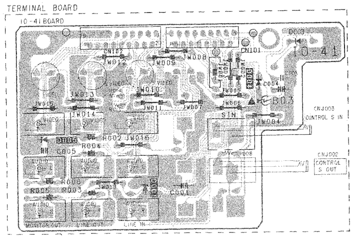

A
B
C
RP-76
CN101
CN201
IC201
IC202
D201
C220
1-633-441

RP-76 BOARD (COMPONENT SIDE)

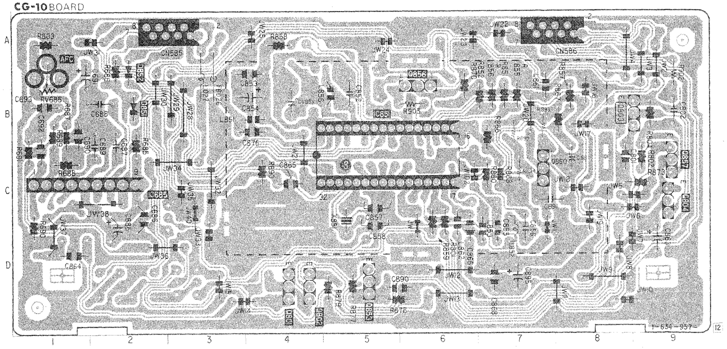

D
E
F
1
2
3
4
5
6
7
1-633-441
13

PI-20	
IC201	E-3
IC202	E-2
IC203	G-2
IC204	G-3
IC205	G-4
IC207	C-1
IC208	D-3
Q201	C-3
Q203	C-2
Q205	I-1
Q206	H-2
Q207	A-2
Q208	A-2
Q209	A-4
Q210	A-4
Q211	A-3
Q212	B-3
Q213	B-4
Q214	A-4
Q215	B-3
Q216	B-2
Q217	B-3
Q218	C-2
Q219	B-2
Q220	B-1
Q223	I-1
Q224	E-3
Q225	C-3
Q226	C-2
Q227	H-4
228	H-3


PI-20 BOARD
A
B
C
D
E
F
G
H
I
1
2
3
4
5
IC201
IC203
IC204
IC205
IC207
IC208
1-635-067
12


TERMINAL BOARD
10-41 BOARD
10-41
CN101
CN102
CNJ003 CONTROL S IN
CNJ002 CONTROL S OUT
MONITOR OUT
LINE OUT
LINE IN
AUDIO
VIDEO

G-10	
851	B-2
852	A-2
853	D-4
685	C-1
851	B-5
801	D-4
802	D-4
803	B-8
804	C-9
853	D-5
856	A-6
857	C-9
860	B-7


CG-10 BOARD
A
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AFC
CN585
CN586
IC851
IC685
1-634-957
12

RP-76 BOARD

DIODE

D101	8-719-400-18	DIODE MA152WK
D201	8-719-400-18	DIODE MA152WK
D203	8-719-400-18	DIODE MA152WK
D205	8-719-400-18	DIODE MA152WK
D206	8-719-400-18	DIODE MA152WK
D207	8-719-400-18	DIODE MA152WK

IC

IC101	8-759-320-55	IC HA12115MP
IC201	8-759-320-52	IC HA118019NT
IC202	8-759-420-60	IC AN6392L

TRANSISTOR

Q101	8-729-216-22	TRANSISTOR 2SA1162
Q201	8-729-920-74	TRANSISTOR 2SC2412K-QR
Q202	8-729-920-74	TRANSISTOR 2SC2412K-QR
Q203	8-729-920-71	TRANSISTOR 2SA1037K-QR
Q204	8-729-901-01	TRANSISTOR DTC144EK
Q205	8-729-920-71	TRANSISTOR 2SA1037K-QR
Q206	8-729-901-01	TRANSISTOR DTC144EK
Q207	8-729-901-01	TRANSISTOR DTC144EK
Q209	8-729-920-71	TRANSISTOR 2SA1037K-QR
Q210	8-729-901-05	TRANSISTOR DTA124EK
Q211	8-729-901-01	TRANSISTOR DTC144EK
Q212	8-729-901-01	TRANSISTOR DTC144EK
Q213	8-729-901-01	TRANSISTOR DTC144EK
Q301	8-729-901-01	TRANSISTOR DTC144EK
Q302	8-729-920-71	TRANSISTOR 2SA1037K-QR
Q303	8-729-920-71	TRANSISTOR 2SA1037K-QR

CG-10 BOARD

DIODE

D851	8-719-911-19	DIODE 1SS119
D852	8-719-911-19	DIODE 1SS119

IC

IC685	8-759-996-03	IC LVA519S
IC851	8-759-634-22	IC M50554-182SP

TRANSISTOR

Q801	8-729-900-61	TRANSISTOR DTA114ES
Q802	8-729-900-80	TRANSISTOR DTC114ES
Q803	8-729-900-89	TRANSISTOR DTC144ES
Q804	8-729-900-65	TRANSISTOR DTA144ES
Q853	8-729-423-37	TRANSISTOR 2SC3311A-QRS
Q856	8-729-423-44	TRANSISTOR 2SA1309A-QRS
Q857	8-729-423-37	TRANSISTOR 2SC3311A-QRS
Q860	8-729-423-37	TRANSISTOR 2SC3311A-QRS

TERMINAL BOARD is replaced as a block.

PI-20 BOARD

IC201	.8-759-800-
IC202	.8-759-822-
IC203	8-759-822-
IC204	.8-759-501-
IC205	8-759-800-
IC207	8-759-800-
IC208	8-759-420-
Q201	8-729-100-
Q203	8-729-100-
Q205	8-729-100-
Q206	8-729-100-
Q207	8-729-216-
Q208	8-729-100-
Q209	8-729-216-
Q210	8-729-100-
Q211	8-729-216-
Q212	8-729-100-
Q213	8-729-216-
Q214	8-729-100-
Q215	8-729-216-
Q216	8-729-216-
Q217	8-729-100-
Q218	8-729-100-
Q219	8-729-901-
Q220	8-729-901-
Q223	8-729-100-
Q224	8-729-216-
Q225	8-729-100-
Q226	8-729-100-
Q227	8-729-216-
Q228	8-729-100-

WK
WK
WK
WK
WK

WK

T

2SA1162
2SC2412K-QR
2SC2412K-QR
2SA1037K-QR
DTC144EK
2SA1037K-QR
DTC144EK
DTC144EK
2SA1037K-QR
DTA124EK
DTC144EK
DTC144EK
DTC144EK
DTC144EK
2SA1037K-QR
2SA1037K-QR

9
9

2SP

DTA114ES
DTC114ES
DTC144ES
DTA144ES
2SC3311A-QRS
2SA1309A-QRS
2SC3311A-QRS
2SC3311A-QRS

PI-20 BOARD

IC

IC201	.8-759-800-81	IC LA7016
IC202	.8-759-822-60	IC LA7222
IC203	8-759-822-60	IC LA7222
IC204	.8-759-501-20	IC LVA522S
IC205	8-759-800-81	IC LA7016
IC207	8-759-800-81	IC LA7016
IC208	8-759-420-62	IC AN3916

TRANSISTOR

Q201	8-729-100-66	TRANSISTOR 2SC1623
Q203	8-729-100-66	TRANSISTOR 2SC1623
Q205	8-729-100-66	TRANSISTOR 2SC1623
Q206	8-729-100-66	TRANSISTOR 2SC1623
Q207	8-729-216-22	TRANSISTOR 2SA1162
Q208	8-729-100-66	TRANSISTOR 2SC1623
Q209	8-729-216-22	TRANSISTOR 2SA1162
Q210	8-729-100-66	TRANSISTOR 2SC1623
Q211	8-729-216-22	TRANSISTOR 2SA1162
Q212	8-729-100-66	TRANSISTOR 2SC1623
Q213	8-729-216-22	TRANSISTOR 2SA1162
Q214	8-729-100-66	TRANSISTOR 2SC1623
Q215	8-729-216-22	TRANSISTOR 2SA1162
Q216	8-729-216-22	TRANSISTOR 2SA1162
Q217	8-729-100-66	TRANSISTOR 2SC1623
Q218	8-729-100-66	TRANSISTOR 2SC1623
Q219	8-729-901-01	TRANSISTOR DTC144EK
Q220	8-729-901-01	TRANSISTOR DTC144EK
Q223	8-729-100-66	TRANSISTOR 2SC1623
Q224	8-729-216-22	TRANSISTOR 2SA812
Q225	8-729-100-66	TRANSISTOR 2SC1623
Q226	8-729-100-66	TRANSISTOR 2SC1623
Q227	8-729-216-22	TRANSISTOR 2SA1162
Q228	8-729-100-66	TRANSISTOR 2SC1623

YC-92 BOARD

DIODE

D101	8-719-400-18	DIODE MA152WK
D103	8-719-400-18	DIODE MA152WK
D104	8-719-400-18	DIODE MA152WK
D105	8-719-400-18	DIODE MA152WK
D201	8-719-400-18	DIODE MA152WK
D202	8-719-400-18	DIODE MA152WK
D770	8-719-400-18	DIODE MA152WK
D803	8-719-400-18	DIODE MA152WK

IC

IC101	8-759-420-64	IC AN3237FB
IC102	8-759-710-07	IC NJM2234M
IC201	8-759-710-07	IC NJM2234M
IC202	8-759-996-67	IC VC2031DP
IC702	8-759-710-07	IC NJM2234M
IC704	8-759-420-62	IC AN3916
IC806	8-759-009-11	IC MC14070BF

TRANSISTOR

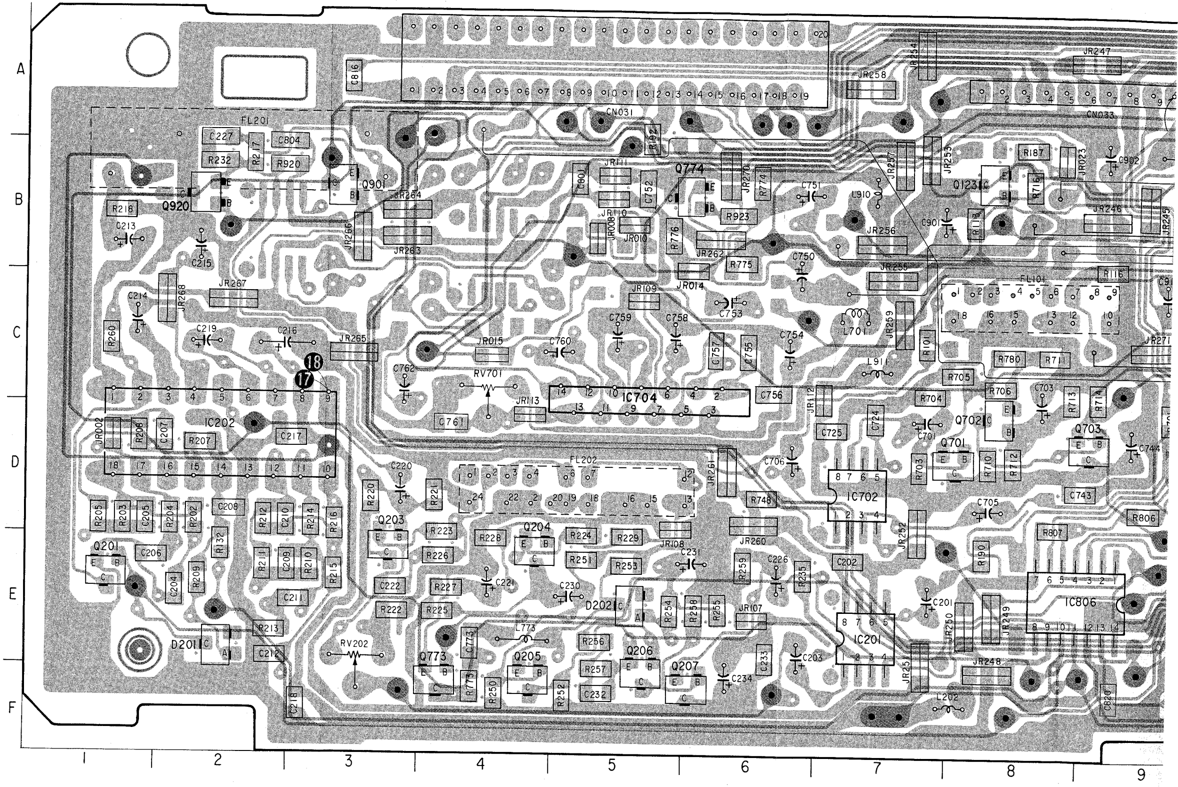
Q101	8-729-901-01	TRANSISTOR DTC144EK
Q102	8-729-901-01	TRANSISTOR DTC144EK
Q103	8-729-901-01	TRANSISTOR DTC144EK
Q104	8-729-901-01	TRANSISTOR DTC144EK
Q105	8-729-901-01	TRANSISTOR DTC144EK
Q106	8-729-901-01	TRANSISTOR DTC144EK
Q107	8-729-901-01	TRANSISTOR DTC144EK
Q108	8-729-901-01	TRANSISTOR DTC144EK
Q109	8-729-901-01	TRANSISTOR DTC144EK
Q110	8-729-901-01	TRANSISTOR DTC144EK
Q113	8-729-901-01	TRANSISTOR DTC144EK
Q114	8-729-901-01	TRANSISTOR DTC144EK
Q116	8-729-901-01	TRANSISTOR DTC144EK
Q118	8-729-901-06	TRANSISTOR DTA144EK
Q119	8-729-901-06	TRANSISTOR DTA144EK
Q120	8-729-100-66	TRANSISTOR 2SC1623
Q121	8-729-100-66	TRANSISTOR 2SC1623
Q122	8-729-122-63	TRANSISTOR 2SA1226
Q123	8-729-216-22	TRANSISTOR 2SA1162
Q201	8-729-901-01	TRANSISTOR DTC144EK
Q203	8-729-100-66	TRANSISTOR 2SC1623
Q204	8-729-100-66	TRANSISTOR 2SC1623
Q205	8-729-100-66	TRANSISTOR 2SC1623
Q206	8-729-216-22	TRANSISTOR 2SA1162
Q207	8-729-100-66	TRANSISTOR 2SC1623
Q701	8-729-100-66	TRANSISTOR 2SC1623
Q702	8-729-100-66	TRANSISTOR 2SC1623
Q703	8-729-100-66	TRANSISTOR 2SC1623
Q770	8-729-901-01	TRANSISTOR DTC144EK
Q771	8-729-901-01	TRANSISTOR DTC144EK
Q773	8-729-901-01	TRANSISTOR DTC144EK
Q774	8-729-100-66	TRANSISTOR 2SC1623
Q801	8-729-216-22	TRANSISTOR 2SA1162
Q803	8-729-900-53	TRANSISTOR DTC114EK
Q804	8-729-301-98	TRANSISTOR 2SA1162
Q901	8-729-901-01	TRANSISTOR DTC144EK
Q920	8-729-216-22	TRANSISTOR 2SA812-T1M6

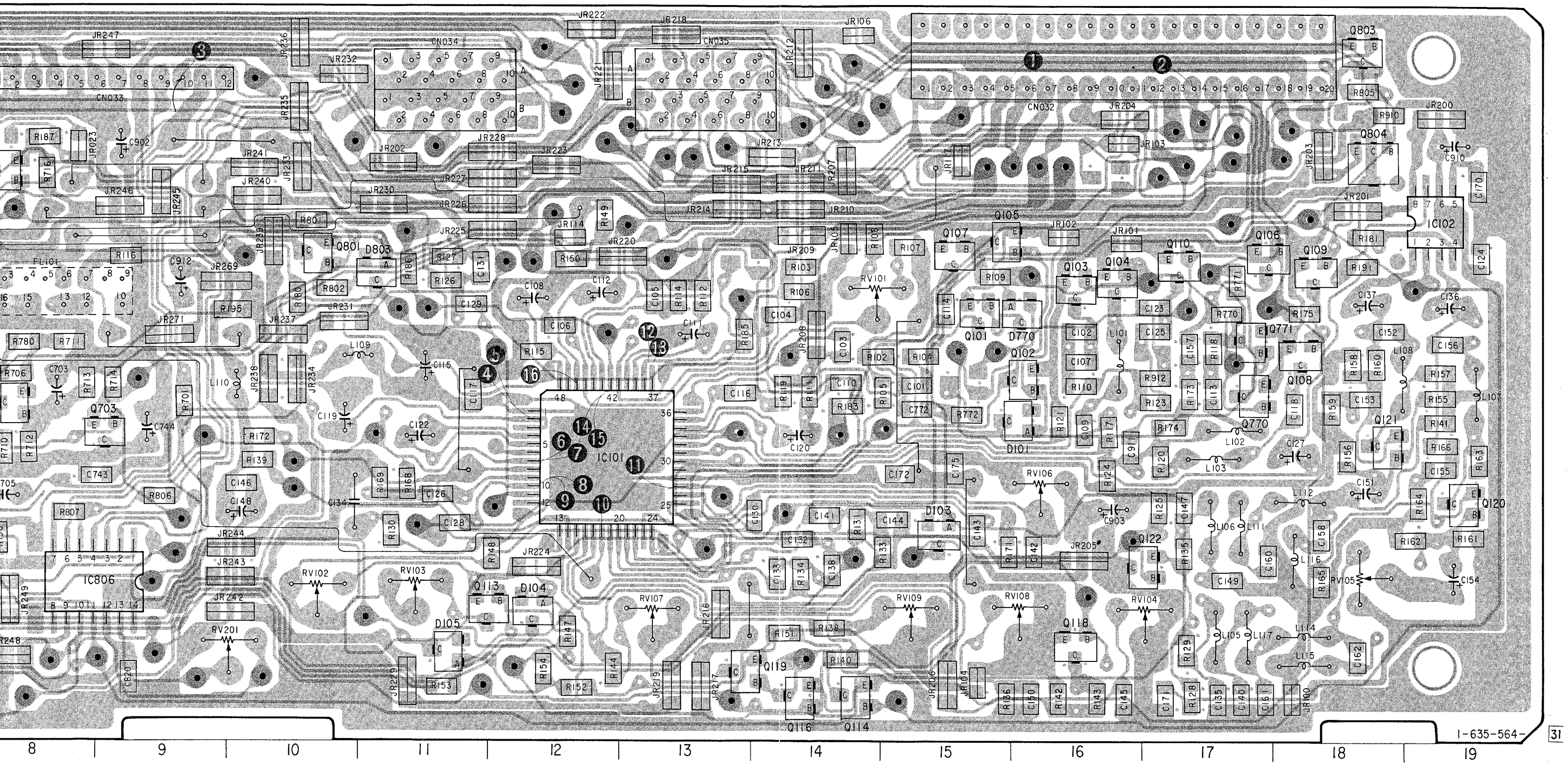
YC-92	
D101	D-16
D103	E-15
D104	E-12
D105	F-11
D201	E-2
D202	E-5
D770	C-16
D803	C-11
IC101	D-12
IC102	B-19
IC201	E-7
IC202	D-2
IC702	D-7
IC704	D-5
IC806	E-8
Q101	C-15
Q102	C-16
Q103	C-16
Q104	C-16
Q105	B-15
Q106	B-17
Q107	B-15
Q108	C-18
Q109	B-18
Q110	B-17
Q113	E-11
Q114	F-14
Q116	F-14
Q118	F-16
Q119	F-13
Q120	D-19
Q121	D-18
Q122	E-17
Q123	B-8
Q201	E-1
Q203	E-3
Q204	E-4
Q205	F-4
Q206	F-5
Q207	F-6
Q701	D-8
Q702	D-8
Q703	D-9
Q770	C-17
Q771	C-17
Q773	F-4
Q774	B-6
Q801	B-10
Q803	A-18
Q804	B-18
Q901	B-3
Q920	B-2

YC-92 (Y PROCESS) PRINTED WIRING BOARD

—Ref. No. YC-92 BOARD : 8000 series—

YC-92 BOARD




CN032
CN033
CN034
CN035
IC101
IC102
IC806
FL101
Q101
Q102
Q103
Q104
Q105
Q106
Q107
Q108
Q109
Q110
Q113
Q114
Q116
Q118
Q119
Q120
Q121
Q122
Q703
Q770
Q771
Q801
Q803
Q804
D101
D103
D104
D105
D770
D803
RV101
RV102
RV103
RV104
RV105
RV106
RV107
RV108
RV109
RV201
L101
L102
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L117
1-635-564-
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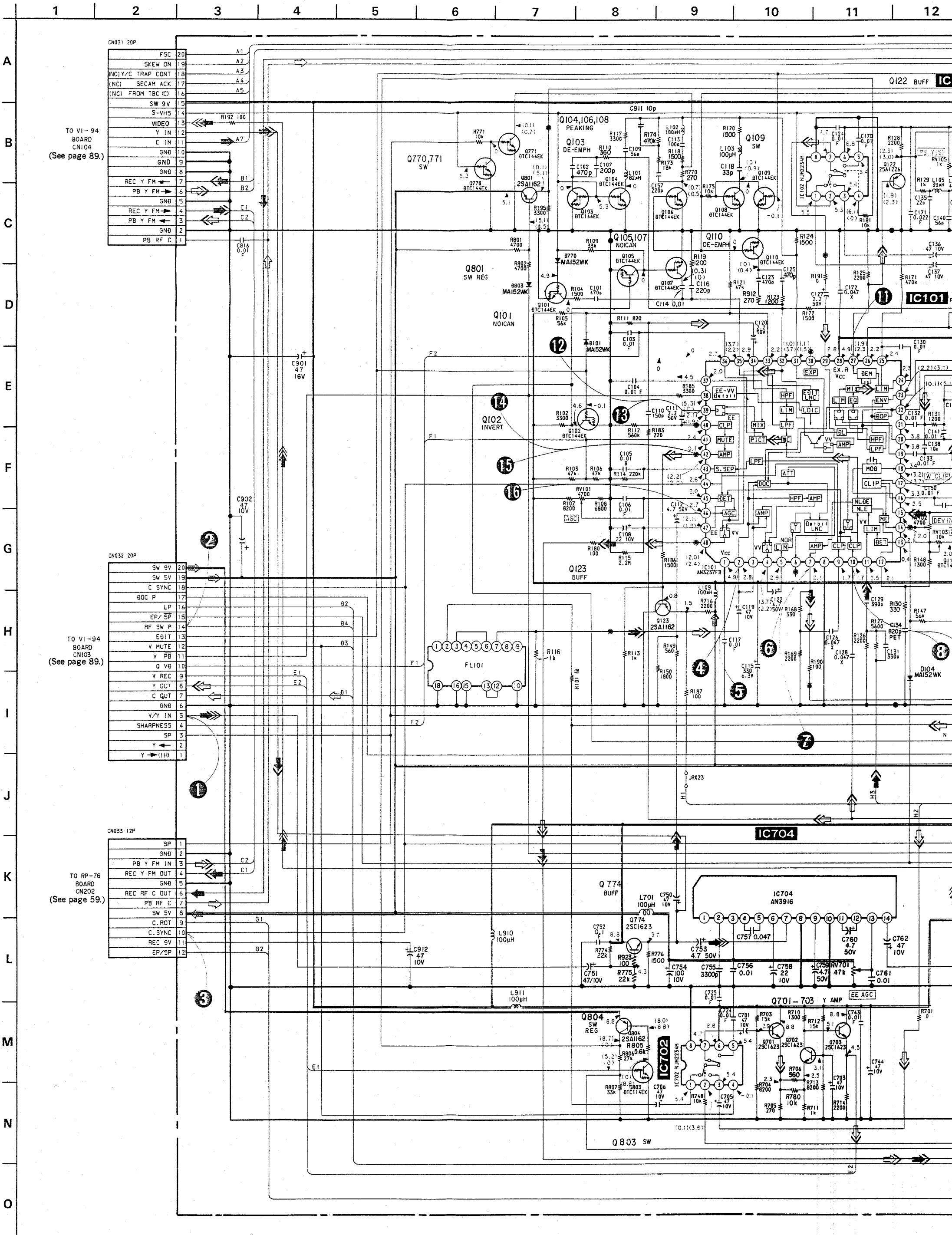
VIDEO (2) **VIDEO (2)**

YC-92 (Y PROCESS) SCHEMATIC DIAGRAM

—Ref. No. YC-92 BOARD : 8000 series—



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I
J
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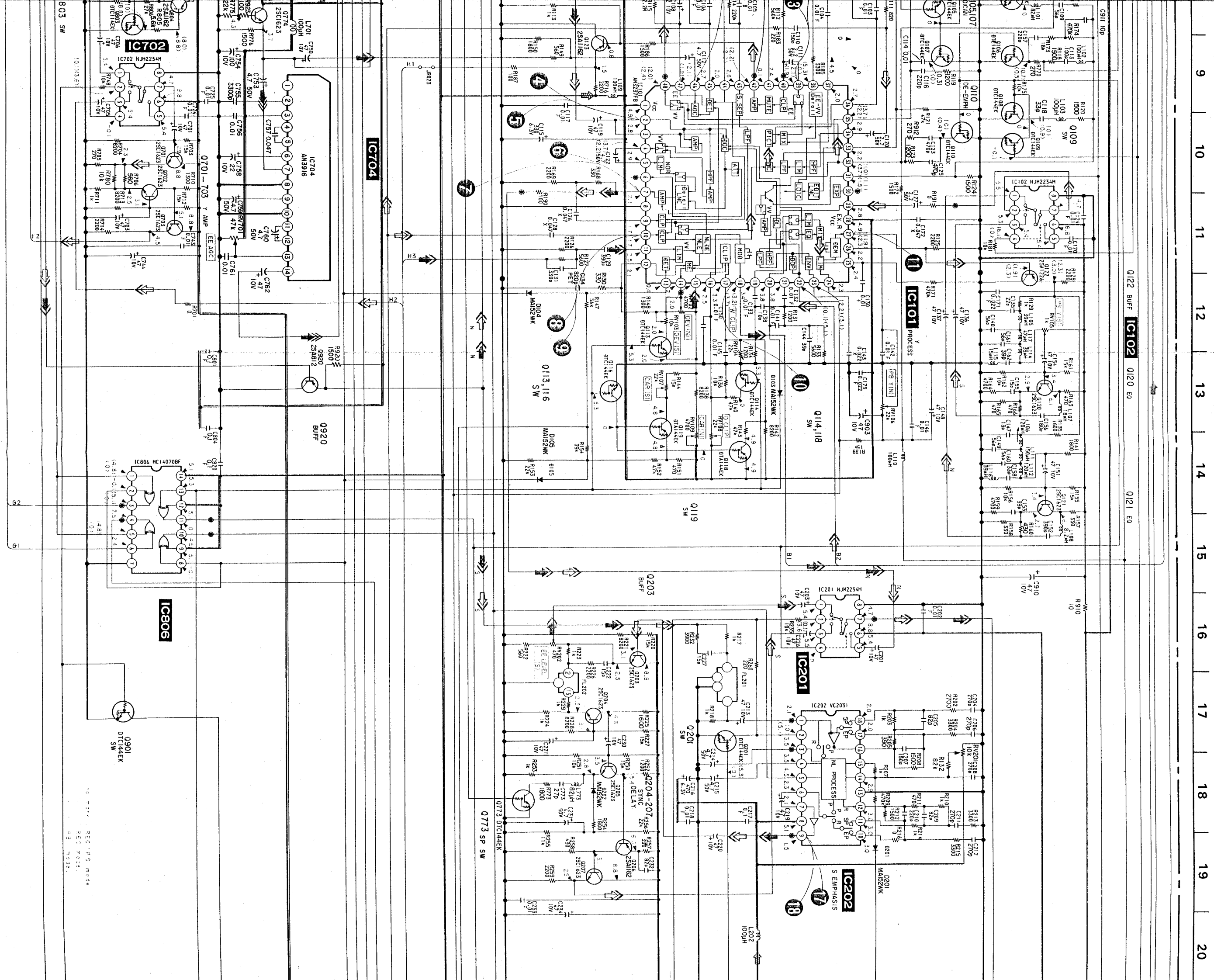
L
M
N
O
CN031 20P
FSC 20
SKEW ON 19
(NC) Y/C TRAP CONT 18
(NC) SECAM ACK 17
(NC) FROM TBC (C) 16
SW 9V 15
S-VHS 14
VIDEO 13
Y IN 12
C IN 11
GND 10
GND 9
GND 8
REC Y FM 7
PB Y FM 6
GND 5
REC Y FM 4
PB Y FM 3
GND 2
PB RF C 1
TO VI-94 BOARD CN104 (See page 89.)
CN032 20P
SW 9V 20
SW 5V 19
C SYNC 18
DOC P 17
LP 16
EP/SP 15
RF SW P 14
EDIT 13
V MUTE 12
V PB 11
Q V0 10
V REC 9
Y OUT 8
C OUT 7
GND 6
V/Y IN 5
SHARPNESS 4
SP 3
Y 2
Y (H) 1
TO VI-94 BOARD CN103 (See page 89.)
CN033 12P
SP 1
GND 2
PB Y FM IN 3
REC Y FM OUT 4
GND 5
REC RF C OUT 6
PB RF C 7
SW 5V 8
C.ROT 9
C.SYNC 10
REC 9V 11
EP/SP 12
TO RP-76 BOARD CN202 (See page 59.)
Q122 BUFF
Q104,106,108 PEAKING
Q103 DE-EMPH
Q109 SW
Q770,771 SW
Q801 SW REG
Q101 NOICAN
Q105,107 NOICAN
Q110 DE-EMPH
Q102 INVERT
Q123 BUFF
IC101 AN3237FB
IC102 NJM2234M
FL101
IC704
IC704 AN3916
Q774 BUFF
Q804 SW REG
IC702
IC702 NJM2234M
Q701-703 Y AMP
Q803 SW
EE AGC
L910 100μH
L911 100μH
L701 100μH
C901 47 16V
C902 47 10V
C912 47 10V
D104 MA152WK
D101 MA152WK
D803 MA152WK
D770 MA152WK
JR023


IC702
IC702 NJM2234M
IC704
IC704 AN3916
Q701–703 Y AMP
EE AGC
Q920 BUFF
IC806 MC14070BF
IC806
Q901 DTC144EK SW
803 SW
Q113,116 SW
Q114,118 SW
Q119 SW
IC101 Y PROCESS
IC101 AN3237FB
Q110 DE-EMPH
Q109 SW
IC102 NJM2234M
IC102
Q122 BUFF
Q120 EQ
Q121 EQ
Q203 BUFF
Q201 SW
Q204–207 SYNC DELAY
Q773 DTC144EK
Q773 SP SW
IC201 NJM2234M
IC201
IC202 VC2031
NL PROCESS
IC202 S EMPHASIS
D201 MA152WK
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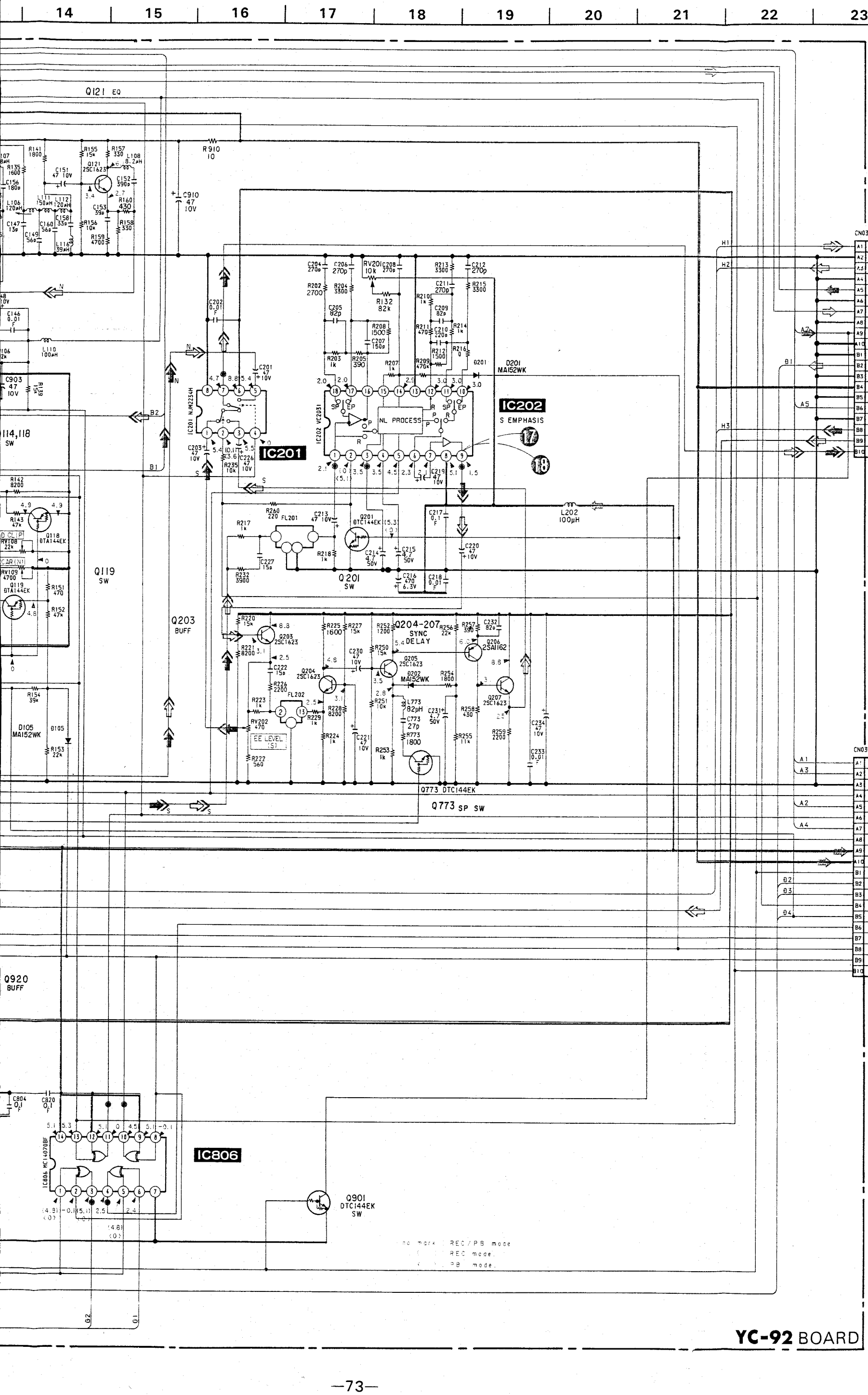
14
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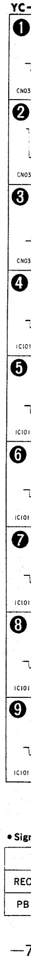
20
21
22
23
24
25
Q121 EQ
R910 10
C910 47 10V
IC201 NJM2254H
IC201
IC202 VC2031
IC202
S EMPHASIS
NL PROCESS
SP
EP
D201 MA152WK
L202 100μH
Q201 DTC144EK
Q201 SW
FL201
FL202
Q203 BUFF
Q203 2SC1623
Q204 2SC1623
Q205 2SC1623
Q206 2SA1162
Q207 2SC1623
Q204-207 SYNC DELAY
D202 MA152WK
L773 82μH
Q773 DTC144EK
Q773 SP SW
RV202 470
EE LEVEL (S)
Q119 SW
Q118 DTA144EK
Q119 DTA144EK
D105 MA152WK
Q114,118 SW
Q920 BUFF
IC806 MC14070BF
IC806
Q901 DTC144EK SW
G1
G2
H1
H2
H3
A1
A2
A3
A4
A5
A7
B1
B2
D2
D3
D4
CN034 20P
A1 PB Y
A2 GND
A3 Y
A4 GND
A5 REC RF C
A6 GND
A7 PB RF C
A8 GND
A9 C
A10 NC
B1 NC
B2 C
B3 GND
B4 NC
B5 GND
B6 NC
B7 GND
B8 YNR (TH)
B9 YNR
B10 YNR
TO YC-93 BOARD CN040 (See page 78.)
CN035 20P
A1 FSC
A2 Y/C TRAP CONT(NC)
A3 GND
A4 SP
A5 SKEW ON
A6 S-VHS
A7 NC
A8 DOC P
A9 SW 5V
A10 SW 9V
B1 PB 5V
B2 LP
B3 V MUTE
B4 EDIT
B5 RF SW P
B6 C ROT
B7 C SYNC
B8 V PB
B9 EP/SP
B10 S-VHS
TO YC-93 BOARD CN041 (See page 78.)
YC-92 BOARD

no mark : REC/PB mode
( ) : REC mode.
< > : PB mode.


YC-
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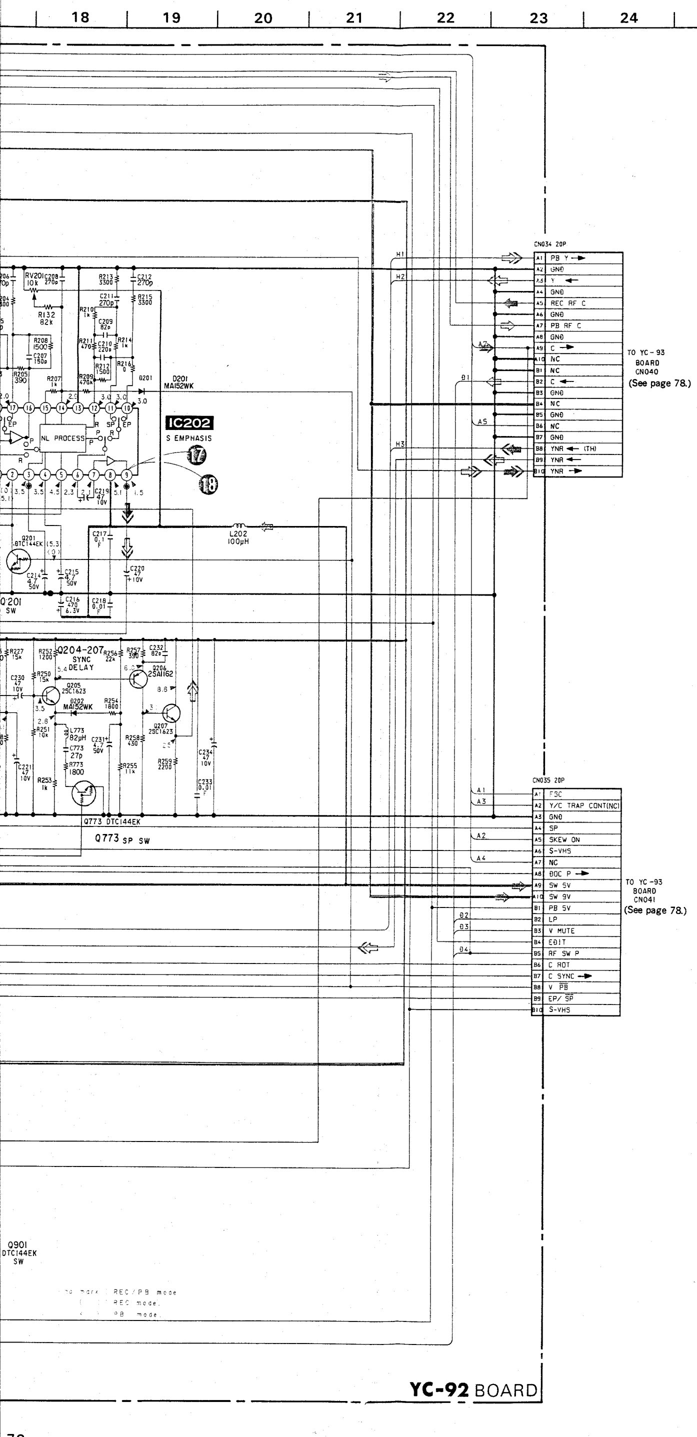
• Sig
REC
PB



18
19
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21
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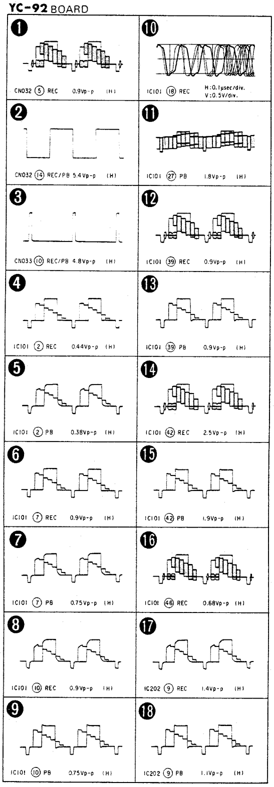
26
27
28
IC202
S EMPHASIS
NL PROCESS
RV201 10k
R132 82k
R208 1500
C207 150p
R205 390
R207 1k
R209 470k
R210 1k
R211 470
R212 1500
R213 3300
R214 1k
R215 3300
R216 0
C208 270p
C209 82p
C210 220p
C211 270p
C212 270p
D201 MA152WK
Q201 DTC144EK SW
C214 4.7 50V
C215 4.7 50V
C216 470 6.3V
C217 0.1 F
C218 0.01 F
C219 47 10V
C220 47 10V
L202 100μH
Q204-207 SYNC DELAY
Q205 2SC1623
Q206 2SA1162
Q207 2SC1623
Q202 MA152WK
R227 15k
R250 15k
R251 10k
R252 1200
R253 1k
R254 1800
R255 11k
R256 22k
R257 390
R258 430
R259 2200
C221 47 10V
C230 47 10V
C231 4.7 50V
C232 82p
C233 0.01 F
C234 47 10V
L773 82μH
C773 27p
R773 1800
Q773 DTC144EK
Q773 SP SW
Q901 DTC144EK SW
no mark : REC/PB mode
( ) : REC mode.
< > : PB mode.
CN034 20P
A1 PB Y
A2 GND
A3 Y
A4 GND
A5 REC RF C
A6 GND
A7 PB RF C
A8 GND
A9 C
A10 NC
B1 NC
B2 C
B3 GND
B4 NC
B5 GND
B6 NC
B7 GND
B8 YNR (TH)
B9 YNR
B10 YNR
TO YC-93 BOARD CN040 (See page 78.)
CN035 20P
A1 FSC
A2 Y/C TRAP CONT(NC)
A3 GND
A4 SP
A5 SKEW ON
A6 S-VHS
A7 NC
A8 DOC P
A9 SW 5V
A10 SW 9V
B1 PB 5V
B2 LP
B3 V MUTE
B4 EDIT
B5 RF SW P
B6 C ROT
B7 C SYNC
B8 V PB
B9 EP/SP
B10 S-VHS
TO YC-93 BOARD CN041 (See page 78.)
H1
H2
H3
A1
A2
A3
A4
A5
A7
D1
D2
D3
D4
YC-92 BOARD

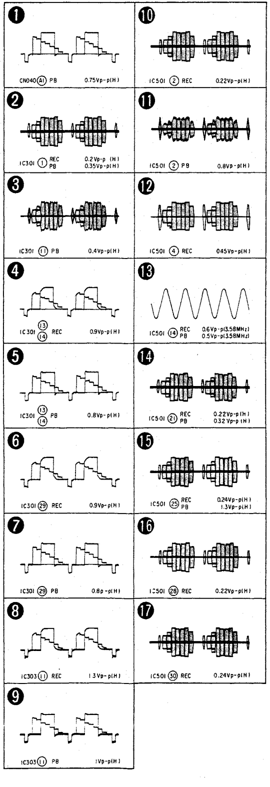
YC-92 BOARD



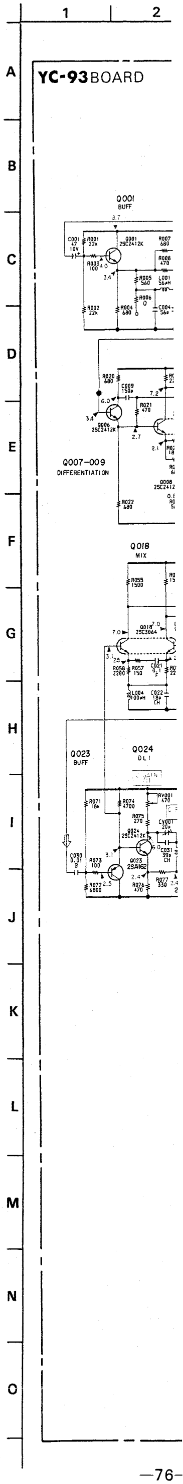
- **Signal path**

	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
REC	➡	➡»	➡»»
PB	⇨	⇨»	⇨»»

YC-93 BOARD



YC-93 (CHROMA PROCES
—Ref. No. YC-93 BOARD: 3


1
2
A
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C
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E
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G
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I
J
K
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M
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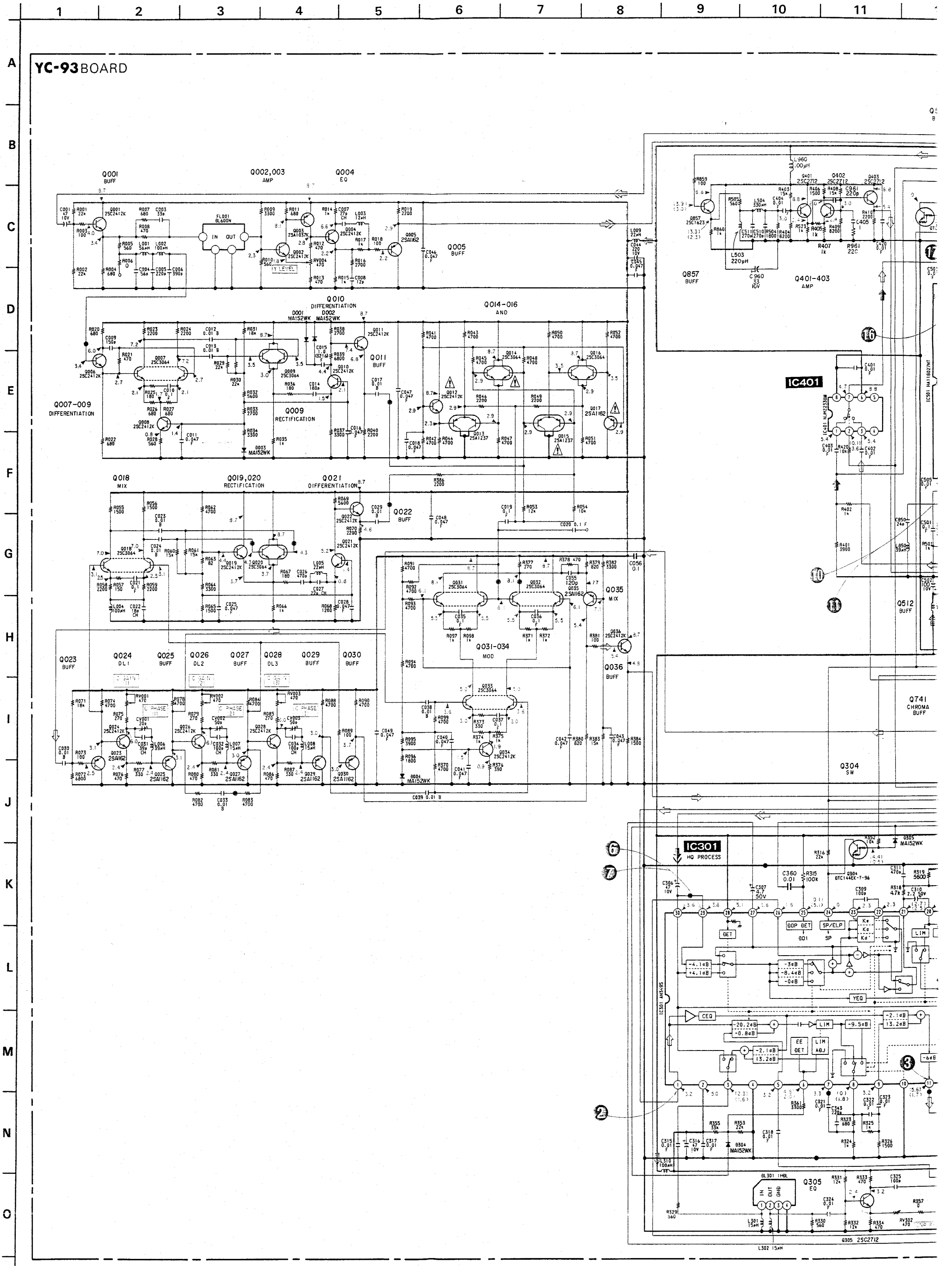
O
YC-93BOARD
Q001
BUFF
C001 47 10V
R001 22k
Q001 2SC2412K
R007 680
R008 470
R003 100
R005 560
L001 56μH
R006 0
R002 22k
R004 680
C004 56p
R020 680
C009 150p
R021 470
Q006 2SC2412K
Q007–009
DIFFERENTIATION
Q008 2SC2412
R022 680
Q018
MIX
R055 1500
Q018 2SC3064
R058 2200
R057 150
C021 0.1 F
L004 100μH
C022 18p CH
Q023
BUFF
Q024
DL1
C GAIN
R071 18k
R074 4700
RV001 470
R075 270
Q024 2SC2412K
CV001 20p
C030 0.01 B
R073 100
Q023 2SA1162
C031 39p CH
R072 6800
R076 470
R077 330

YC-93 (CHROMA PROCESS, HQ PROCESS, CPI) SCHEMATIC DIAGRAM

—Ref. No. YC-93 BOARD : 3000 series—


YC-93BOARD
Q001 BUFF
Q002,003 AMP
Q004 EQ
Q005 BUFF
Q007-009 DIFFERENTIATION
Q009 RECTIFICATION
Q010 DIFFERENTIATION
D001 MA152WK
D002 MA152WK
Q011 BUFF
Q014-016 AND
Q018 MIX
Q019,020 RECTIFICATION
Q021 DIFFERENTIATION
Q022 BUFF
Q023 BUFF
Q024 DL1
Q025 BUFF
Q026 DL2
Q027 BUFF
Q028 DL3
Q029 BUFF
Q030 BUFF
Q031-034 MOD
Q035 MIX
Q036 BUFF
Q857 BUFF
Q401-403 AMP
IC401
IC401 NJM2233BM
IC501 HA118027NT
Q512 BUFF
Q741 CHROMA BUFF
Q304 SW
IC301
HQ PROCESS
IC301 AN3495
Q305 EQ
Q305 2SC2712
BL301 1HDL
IN
OUT
GND
FL001 6L600N
Y LEVEL
C GAIN
C PHASE
CEQ
DET
BDP DET
SP/ELP
EE DET
LIM
LIM ADJ
YEQ
BD1
SP
-4.1dB
+4.1dB
-3dB
-8.4dB
-0dB
-20.2dB
-0.8dB
-2.1dB
13.2dB
-9.5dB
-6dB
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
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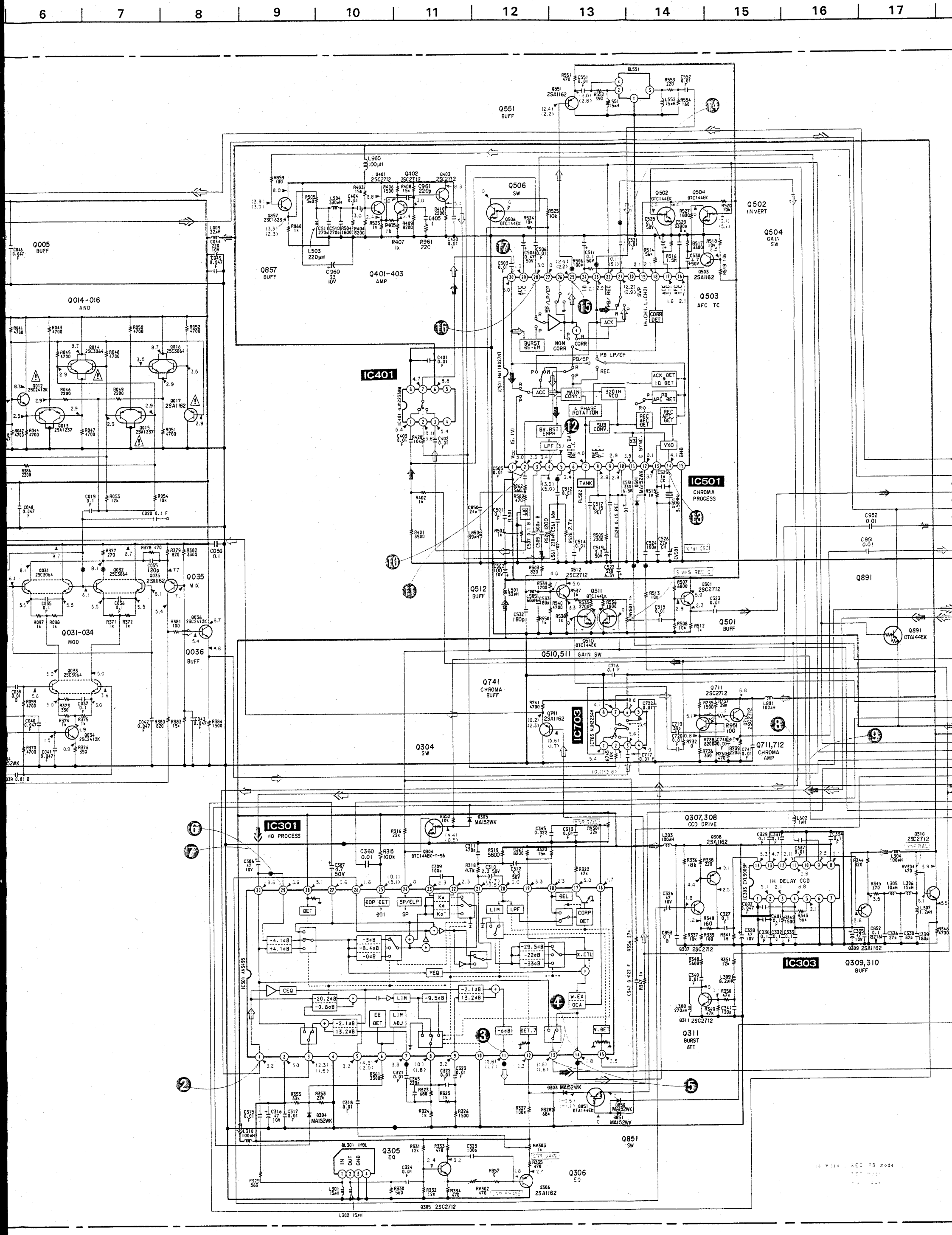
6
7
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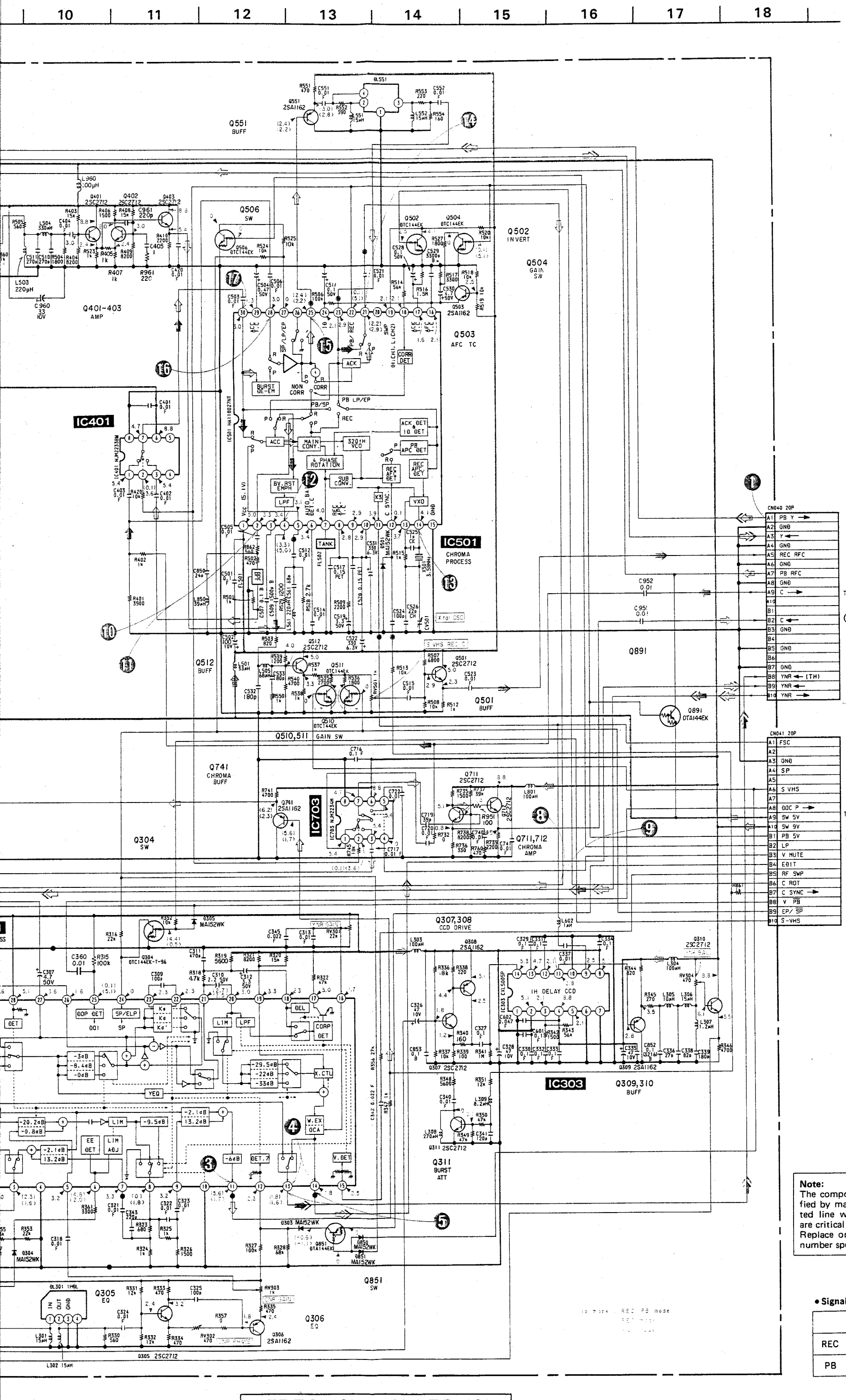
11
12
13
14
15
16
17
IC301
HQ PROCESS
IC301 AN3495
IC303
IC303 CXL5005P
1H DELAY CCD
IC401
IC401 NJM2233BM
IC501
CHROMA PROCESS
IC501 HA11802TNT
IC703
IC703 NJM2234M
Q005 BUFF
Q014-016 AND
Q031-034 MOD
Q035 MIX
Q036 BUFF
Q304 SW
Q305 EQ
Q306 EQ
Q307,308 CCD DRIVE
Q309,310 BUFF
Q311 BURST ATT
Q401-403 AMP
Q501 BUFF
Q502 INVERT
Q503 AFC TC
Q504 GAIN SW
Q506 SW
Q510,511 GAIN SW
Q512 BUFF
Q551 BUFF
Q711,712 CHROMA AMP
Q741 CHROMA BUFF
Q851 SW
Q857 BUFF
Q891
Q891 DTA144EK
BL301 1H0L
BL551
IN
OUT
GND
CEQ
YEQ
DET
DOP DET
SP/ELP
LIM
LPF
DEL
CORP DET
X.CTL
W.EX GCA
V.DET
DET.7
EE DET
LIM ADJ
-4.1dB
+4.1dB
-3dB
-8.4dB
-0dB
-29.5dB
-22dB
-33dB
-20.2dB
-0.8dB
-2.1dB
13.2dB
-9.5dB
-6dB
BURST DE-EM
NON CORR
CORR
ACK
CORR DET
ACC
MAIN CONV.
320fH VCO
4 PHASE ROTATION
ACK DET
ID DET
PB APC DET
REC APC DET
REC AFC DET
SUB CONV.
BV.BST EMPH
TANK
VXO
X3
Vcc (5.1V)
GND
SP/LP/EP
PB/SP
PB LP/EP
PB/ REC
REC
C SYNC.
AUTO BAL DET.C
X501 3.58MHz
L302 15μH
L503 220μH
Q305 2SC2712
Q307 2SC2712
Q309 2SA1162
Q311 2SC2712
Q510 DTC144EK
Q512 2SC2712

VIDEO (3) VIDEO (3)


10
11
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18
Q551 BUFF
Q551 2SA1162
BL551
Q401-403 AMP
Q401 2SC2712
Q402 2SC2712
Q403 2SC2712
Q506 SW
Q506 DTC144EK
Q502 INVERT
Q502 DTC144EK
Q504 GAIN SW
Q504 DTC144EK
Q503 AFC TC
Q503 2SA1162
IC401
IC401 NJM2233BM
IC501 HA118027NT
IC501 CHROMA PROCESS
Vcc (5.1V)
SP/LP/EP
BURST DE-EM
NON CORR
CORR
ACK
CORR DET
PB/SP
PB LP/EP
REC
PB/REC
SWP
(H:CH1, L:CH2)
ACC
MAIN CONV.
320fH VCO
ACK DET
1/2 DET
PB APC DET
4 PHASE ROTATION
SUB CONV.
REC AFC DET
REC APC DET
BV,BST EMPH
LPF
AUTO BA DET C
REC C
C SYNC
X3
VXO
GND
TANK
BPF
FL501
FL502
X501 3.58MHz
Xtal OSC
S VHS REC C
Q512 BUFF
Q512 2SC2712
Q501 BUFF
Q501 2SC2712
Q510 DTC144EK
Q511 DTC144EK
Q510,511 GAIN SW
Q891
Q891 DTA144EK
Q741 CHROMA BUFF
Q741 2SA1162
IC703
IC703 NJM2234M
Q711 2SC2712
Q712 2SC2712
Q711,712 CHROMA AMP
Q304 SW
Q304 DTC144EK-T-96
Q305 MA152WK
Q307,308 CCD DRIVE
Q307 2SC2712
Q308 2SA1162
IC303 CXL5005P
1H DELAY CCD
IC303
Q309,310 BUFF
Q309 2SA1162
Q310 2SC2712
Q311 BURST ATT
Q311 2SC2712
YNR GAIN
DOP DET
DOI
SP/ELP
SP
Kx Kd Kd'
LIM
LPF
DEL
CORR DET
-3dB -8.4dB -0dB
-29.5dB -22dB -33dB
X.CTL
YEQ
-20.2dB -0.8dB
LIM
-9.5dB
-2.1dB 13.2dB
W.EX GCA
EE DET
LIM ADJ
-6dB
DET.7
V.DET
-2.1dB 13.2dB
Q303 MA152WK
Q851 DTA144EK
Q850 MA152WK
Q851 MA152WK
Q851 SW
Q304 MA152WK
BL301 1H0L
IN OUT GND
Q305 EQ
Q305 2SC2712
Q306 EQ
Q306 2SA1162
CNR GAIN
CNR PHASE
L301 15μH
L302 15μH
CN040 20P
A1 PB Y →
A2 GND
A3 Y ←
A4 GND
A5 REC RFC
A6 GND
A7 PB RFC
A8 GND
A9 C →
A10
B1
B2 C ←
B3 GND
B4
B5 GND
B6
B7 GND
B8 YNR ← (TH)
B9 YNR ←
B10 YNR →
TO YC-92 BOARD CN034
(See page 74.)
CN041 20P
A1 FSC
A2
A3 GND
A4 SP
A5
A6 S VHS
A7
A8 DOC P →
A9 SW 5V
A10 SW 9V
B1 PB 5V
B2 LP
B3 V MUTE
B4 EDIT
B5 RF SWP
B6 C ROT
B7 C SYNC →
B8 V PB
B9 EP/SP
B10 S-VHS
TO YC-92 BOARD CN035
(See page 74.)
①
③
④
⑤
⑧
⑨
⑩
⑪
⑫
⑬
⑭
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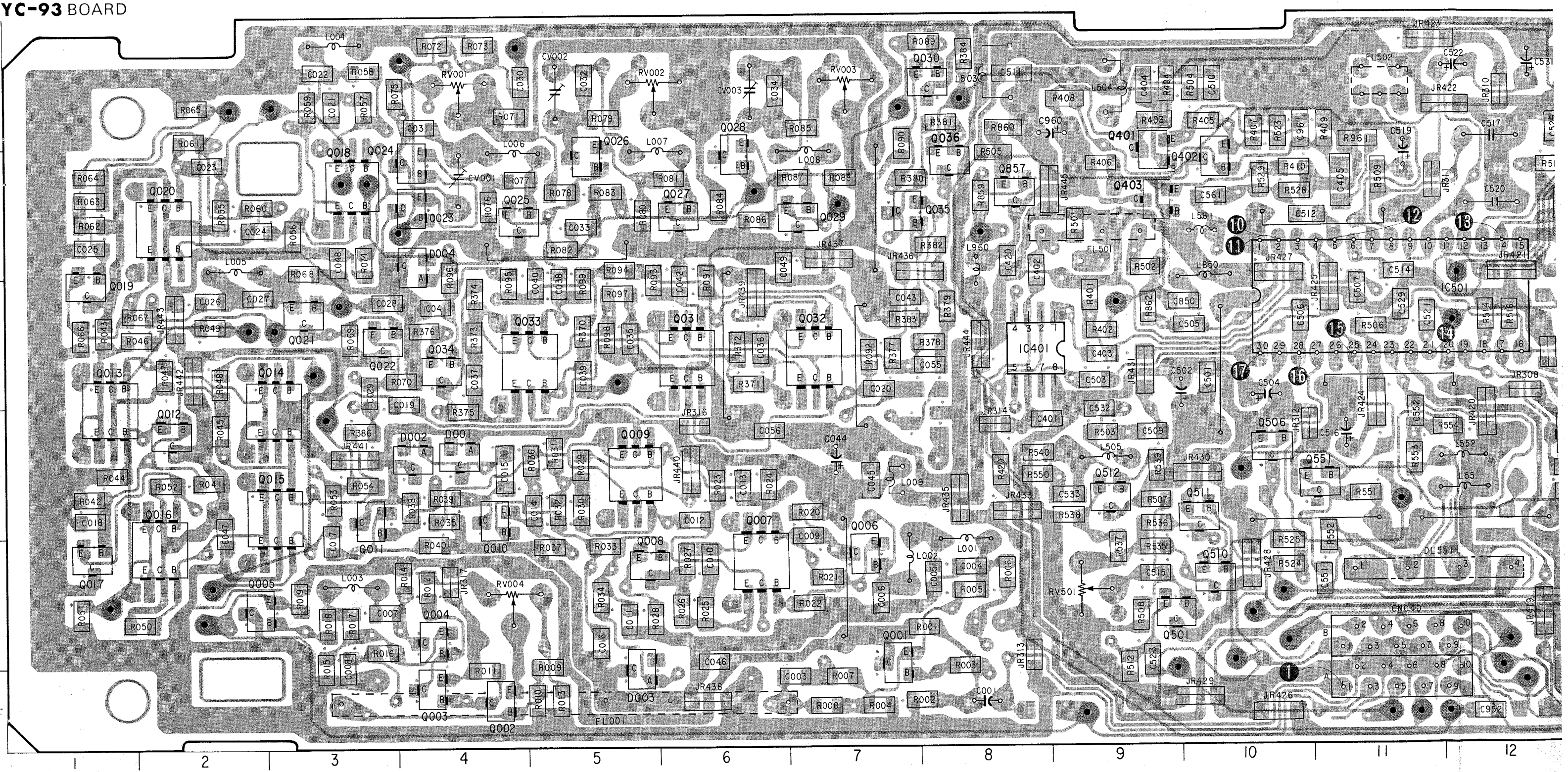
Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

• Signal path

	VIDEO Signal		
	[illegible]		[illegible]
REC	➡	➡»	➡»»
PB	⇨	⇨»	⇨»»

YC-93 (CHROMA PROCESS, HQ PROCESS, CPI) PRINTED WIRING BOARD
—Ref. No. YC-93 BOARD : 3000 series—

YC-93 BOARD



L004
R072
R073
CV002
R058
C022
RV001
RV002
CV003
RV003
R089
Q030
R384
L503
C511
FL502
JR423
C522
C531
R065
R059
C021
R057
R075
C030
C032
C034
R408
L504
C404
R404
R504
C510
JR422
JR310
R061
R071
R079
R085
R381
R860
C960
R403
R405
R407
R523
C961
R409
R961
C519
C517
C023
Q018
Q024
C031
L006
Q026
L007
Q028
L008
Q036
R505
Q401
Q402
R406
R529
R410
C405
R509
JR311
R064
CV001
R077
R081
R087
R088
R380
Q857
Q403
C561
R528
C520
R063
Q020
R076
Q025
R078
R083
Q027
R084
Q029
Q035
R859
JR445
R062
R055
R060
Q023
C033
R080
R086
R501
L561
C512
C025
C024
R056
D004
R082
JR437
R382
L960
FL501
C024
L005
R068
C048
R074
R096
R095
C040
C038
R099
R094
R093
C042
R091
C049
JR436
C420
C402
R502
L850
C514
JR421
IC501
Q019
C026
C027
C028
C041
R374
R097
JR439
C043
R379
R401
R862
C850
JR427
JR425
C507
C529
C521
R514
R516
R066
R043
R067
JR443
R049
Q021
R069
R376
Q033
R370
R098
C035
Q031
R372
C036
Q032
R383
R378
R092
R377
JR444
IC401
R402
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C506
R506
R046
Q022
Q034
R373
C403
C055
Q013
R047
JR442
R048
Q014
C029
R070
C037
C039
R371
C020
C503
JR431
C502
C501
C504
JR308
Q012
C019
R375
JR316
JR314
C401
C532
JR424
C552
R554
JR420
R045
R386
JR441
D002
D001
C015
R036
R031
R029
Q009
JR440
C056
C044
R420
R540
R503
C509
L505
R539
Q506
JR312
C516
Q551
R553
L552
R044
R054
R023
C013
R024
C045
L009
R550
Q512
JR430
L551
R042
R052
R041
Q015
R053
R039
C014
R032
R030
JR435
JR433
C533
R538
R507
Q511
R551
C018
Q016
R038
R035
Q011
Q010
C012
Q007
R020
C009
Q006
L001
R536
R537
R552
C047
C017
R040
R037
R033
Q008
R027
C010
L002
C004
R006
RV501
R535
R525
JR428
Q510
R524
DL551
Q017
Q005
R019
L003
R014
R012
JR317
RV004
R034
R021
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R005
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R051
R050
R018
R017
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R022
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C003
R007
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JR429
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Q002
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R013
FL001
JR438
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R004
R002
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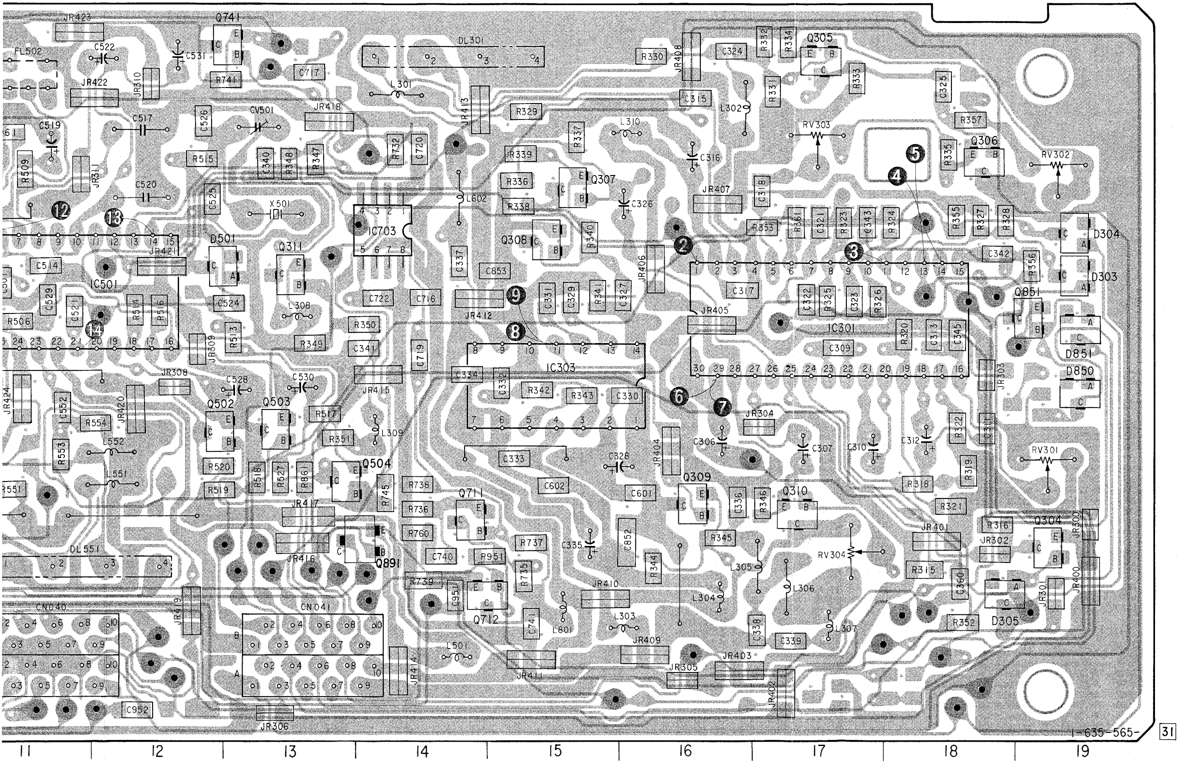
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JR422
JR310
DL301
L301
R330
JR408
C324
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R334
Q305
R333
C325
C519
C517
C526
CV501
JR418
JR413
R329
C315
L302
R331
RV303
R357
R509
JR311
R515
C340
R348
R347
R732
C720
R339
R337
L310
C316
R335
Q306
RV302
C520
C525
X501
R336
Q307
L602
R338
C326
JR407
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IC703
R333
R361
C321
R323
C343
R324
R355
R327
R328
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D501
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Q308
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JR406
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R336
D303
C514
JR421
IC501
C337
C853
C331
C329
R341
C327
C317
C322
R325
C323
R326
Q851
C529
C524
C722
C716
JR412
JR405
R506
R514
R516
L308
R513
R350
IC301
R320
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C345
D851
JR309
R349
C341
C719
IC303
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D850
JR308
C528
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C334
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R343
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JR303
JR424
C552
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C333
C328
JR404
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R520
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R527
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C336
R346
Q310
R319
R551
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JR417
R745
Q711
R736
R318
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C852
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DL551
JR416
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R737
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RV304
JR302
R315
C360
L305
JR400
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CN041
JR419
R739
C951
Q712
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JR410
L304
L306
JR301
D305
C741
L801
L303
C338
L307
R352
C339
JR409
L501
JR411
JR305
JR403
JR414
JR402
C952
JR306
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D001	D-4
D002	D-4
D003	F-5
D004	B-4
D303	C-19
D304	B-19
D305	E-18
D501	B-12
D850	D-19
D851	C-19
IC301	C-17
IC303	C-15
IC401	C-8
IC501	C-11
IC703	B-14
Q001	E-7
Q002	F-4
Q003	F-4
Q004	E-4
Q005	E-2
Q006	E-7
Q007	E-6
Q008	E-5
Q009	D-5
Q010	D-4
Q011	D-3
Q012	D-2
Q013	C-1
Q014	C-3
Q015	D-3
Q016	D-2
Q017	E-1
Q018	B-3
Q019	C-1
Q020	B-2
Q021	C-3
Q022	C-3
Q023	B-4
Q024	B-4
Q025	B-4
Q026	B-5
Q027	B-6
Q028	B-6
Q029	B-7
Q030	A-8
Q031	C-6
Q032	C-7
Q033	C-4
Q034	C-4
Q035	B-7
Q036	B-8
Q304	E-19
Q305	A-17
Q306	B-18
Q307	B-15
Q308	B-15
Q309	D-16
Q310	D-17
Q311	C-13
Q401	B-9
Q402	B-10
Q403	B-9
Q501	E-9
Q502	D-12
Q503	D-13
Q504	D-13
Q506	D-10
Q510	E-10
Q511	D-10
Q512	D-9
Q551	D-11
Q711	D-14
Q712	E-14
Q741	A-12
Q851	C-19
Q857	B-8
Q891	E-14

DIODE

D001	8-719-400-18	DIODE MA152WK
D002	8-719-400-18	DIODE MA152WK
D003	8-719-400-18	DIODE MA152WK
D004	8-719-400-18	DIODE MA152WK
D303	8-719-400-18	DIODE MA152WK
D304	8-719-400-18	DIODE MA152WK
D305	8-719-400-18	DIODE MA152WK
D501	8-719-400-18	DIODE MA152WK
D850	8-719-400-18	DIODE MA152WK
D851	8-719-400-18	DIODE MA152WK

IC

IC301	8-759-420-63	IC AN3495K
IC303	8-752-330-16	IC CXL5005P
IC401	8-759-710-86	IC NJM2233BM
IC501	8-759-320-51	IC HA118027NT
IC703	8-759-710-07	IC NJM2234M

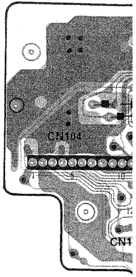
TRANSISTOR

Q001	8-729-901-78	TRANSISTOR 2SC2412K-R
Q002	8-729-901-78	TRANSISTOR 2SC2412K-R
Q003	8-729-216-22	TRANSISTOR 2SA1162
Q004	8-729-901-78	TRANSISTOR 2SC2412K-R
Q005	8-729-216-22	TRANSISTOR 2SA1162
Q006	8-729-901-78	TRANSISTOR 2SC2412K-R
Q007	8-729-801-46	TRANSISTOR 2SC3064
Q008	8-729-901-78	TRANSISTOR 2SC2412K-R
Q009	8-729-801-46	TRANSISTOR 2SC3064
Q010	8-729-901-78	TRANSISTOR 2SC2412K-R
Q011	8-729-901-78	TRANSISTOR 2SC2412K-R
Q012	8-729-901-78	TRANSISTOR 2SC2412K-R
Q013	8-729-803-37	TRANSISTOR 2SA1237
Q014	8-729-801-46	TRANSISTOR 2SC3064
Q015	8-729-803-37	TRANSISTOR 2SA1237
Q016	8-729-801-46	TRANSISTOR 2SC3064
Q017	8-729-216-22	TRANSISTOR 2SA1162
Q018	8-729-801-46	TRANSISTOR 2SC3064
Q019	8-729-901-78	TRANSISTOR 2SC2412K-R
Q020	8-729-801-46	TRANSISTOR 2SC3064
Q021	8-729-901-78	TRANSISTOR 2SC2412K-R
Q022	8-729-901-78	TRANSISTOR 2SC2412K-R
Q023	8-729-216-22	TRANSISTOR 2SA1162
Q024	8-729-901-78	TRANSISTOR 2SC2412K-R
Q025	8-729-216-22	TRANSISTOR 2SA1162
Q026	8-729-901-78	TRANSISTOR 2SC2412K-R
Q027	8-729-216-22	TRANSISTOR 2SA1162
Q028	8-729-901-78	TRANSISTOR 2SC2412K-R
Q029	8-729-216-22	TRANSISTOR 2SA1162
Q030	8-729-216-22	TRANSISTOR 2SA1162
Q031	8-729-801-46	TRANSISTOR 2SC3064
Q032	8-729-801-46	TRANSISTOR 2SC3064
Q033	8-729-801-46	TRANSISTOR 2SC3064
Q034	8-729-901-78	TRANSISTOR 2SC2412K-R
Q035	8-729-216-22	TRANSISTOR 2SA1162
Q036	8-729-901-78	TRANSISTOR 2SC2412K-R
Q304	8-729-901-01	TRANSISTOR DTC144EK
Q305	8-729-271-23	TRANSISTOR 2SC2712
Q306	8-729-216-22	TRANSISTOR 2SA1162
Q307	8-729-271-23	TRANSISTOR 2SC2712
Q308	8-729-216-22	TRANSISTOR 2SA1162
Q309	8-729-216-22	TRANSISTOR 2SA1162
Q310	8-729-271-23	TRANSISTOR 2SC2712
Q311	8-729-271-23	TRANSISTOR 2SC2712
Q401	8-729-271-23	TRANSISTOR 2SC2712
Q402	8-729-271-23	TRANSISTOR 2SC2712
Q403	8-729-271-23	TRANSISTOR 2SC2712
Q501	8-729-271-23	TRANSISTOR 2SC2712
Q502	8-729-901-01	TRANSISTOR DTC144EK
Q503	8-729-216-22	TRANSISTOR 2SA1162G
Q504	8-729-901-01	TRANSISTOR DTC144EK
Q506	8-729-901-01	TRANSISTOR DTC144EK
Q510	8-729-901-01	TRANSISTOR DTC144EK
Q511	8-729-901-01	TRANSISTOR DTC144EK
Q512	8-729-271-23	TRANSISTOR 2SC2712
Q551	8-729-216-22	TRANSISTOR 2SA1162
Q711	8-729-271-23	TRANSISTOR 2SC2712
Q712	8-729-271-23	TRANSISTOR 2SC2712
Q741	8-729-216-22	TRANSISTOR 2SA1162
Q851	8-729-901-06	TRANSISTOR DTA144EK
Q857	8-729-100-66	TRANSISTOR 2SC1623
Q891	8-729-901-06	TRANSISTOR DTA144EK

LR-10 (Y/CHROMA SEP, RF PROCESS) VI-94 (RELAY) PRINTED WIRING BOARD

—Ref. No. LR-10 BOARD : 5000 series, VI-94 BOARD : 6000 series—

VI-94 BOARD



LR-10 BOARD

DIODE

D201	8-719-400-18	DIODE MA152WK
D202	8-719-400-18	DIODE MA152WK
D203	8-719-400-18	DIODE MA152WK
D205	8-719-400-18	DIODE MA152WK
D206	8-719-400-18	DIODE MA152WK
D208	8-719-400-18	DIODE MA152WK
D209	8-719-400-18	DIODE MA152WK
D210	8-719-400-18	DIODE MA152WK
D211	8-719-400-18	DIODE MA152WK

IC

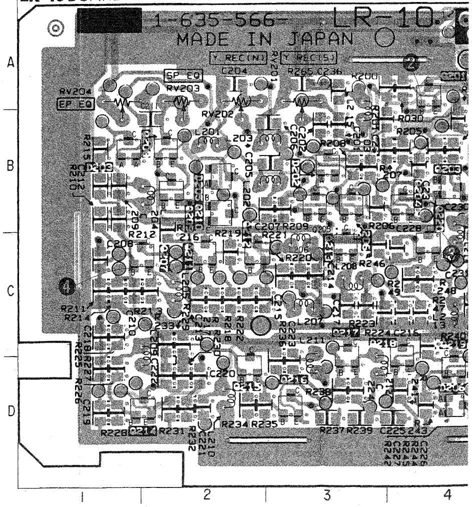
IC651	8-752-039-13	IC CXA1413L
IC652	8-759-800-81	IC LA7016
IC653	8-759-800-81	IC LA7016
IC701	8-759-420-68	IC MN3814
IC702	8-759-420-68	IC MN3814
IC703	8-759-420-78	IC MN3109

TRANSISTOR

Q007	8-729-216-22	TRANSISTOR 2SA1162
Q008	8-729-901-78	TRANSISTOR 2SC2412K-R
Q010	8-729-216-22	TRANSISTOR 2SA1162
Q201	8-729-901-78	TRANSISTOR 2SC2412K-R
Q202	8-729-901-06	TRANSISTOR DTA144EK
Q203	8-729-901-78	TRANSISTOR 2SC2412K-R
Q204	8-729-901-78	TRANSISTOR 2SC2412K-R
Q205	8-729-901-06	TRANSISTOR DTA144EK
Q206	8-729-901-06	TRANSISTOR DTA144EK
Q207	8-729-901-78	TRANSISTOR 2SC2412K-R
Q208	8-729-901-05	TRANSISTOR DTA124EK
Q209	8-729-900-53	TRANSISTOR DTC114EK
Q210	8-729-901-05	TRANSISTOR DTA124EK
Q211	8-729-901-78	TRANSISTOR 2SC2412K-R
Q212	8-729-216-22	TRANSISTOR 2SA1162
Q213	8-729-901-78	TRANSISTOR 2SC2412K-R
Q214	8-729-901-78	TRANSISTOR 2SC2412K-R
Q215	8-729-901-78	TRANSISTOR 2SC2412K-R
Q216	8-729-216-22	TRANSISTOR 2SA1162
Q217	8-729-901-78	TRANSISTOR 2SC2412K-R
Q218	8-729-901-78	TRANSISTOR 2SC2412K-R
Q219	8-729-901-78	TRANSISTOR 2SC2412K-R
Q220	8-729-901-78	TRANSISTOR 2SC2412K-R
Q221	8-729-901-78	TRANSISTOR 2SC2412K-R
Q222	8-729-901-78	TRANSISTOR 2SC2412K-R
Q223	8-729-901-78	TRANSISTOR 2SC2412K-R
Q224	8-729-901-78	TRANSISTOR 2SC2412K-R
Q225	8-729-901-78	TRANSISTOR 2SC2412K-R
Q226	8-729-216-22	TRANSISTOR 2SA1162
Q280	8-729-901-78	TRANSISTOR 2SC2412K-R
Q281	8-729-901-78	TRANSISTOR 2SC2412K-R
Q501	8-729-901-78	TRANSISTOR 2SC2412K-R
Q502	8-729-216-22	TRANSISTOR 2SA1162
Q503	8-729-901-78	TRANSISTOR 2SC2412K-R
Q504	8-729-901-78	TRANSISTOR 2SC2412K-R
Q506	8-729-901-78	TRANSISTOR 2SC2412K-R
Q551	8-729-901-78	TRANSISTOR 2SC2412K-R
Q552	8-729-901-78	TRANSISTOR 2SC2412K-R
Q553	8-729-901-78	TRANSISTOR 2SC2412K-R
Q554	8-729-216-22	TRANSISTOR 2SA1162
Q555	8-729-901-78	TRANSISTOR 2SC2412K-R
Q556	8-729-901-78	TRANSISTOR 2SC2412K-R
Q601	8-729-901-78	TRANSISTOR 2SC2412K-R
Q602	8-729-901-78	TRANSISTOR 2SC2412K-R
Q603	8-729-901-78	TRANSISTOR 2SC2412K-R
Q604	8-729-901-78	TRANSISTOR 2SC2412K-R
Q605	8-729-901-78	TRANSISTOR 2SC2412K-R
Q607	8-729-901-78	TRANSISTOR 2SC2412K-R
Q652	8-729-901-78	TRANSISTOR 2SC2412K-R
Q653	8-729-901-78	TRANSISTOR 2SC2412K-R
Q654	8-729-216-22	TRANSISTOR 2SA1162
Q655	8-729-216-22	TRANSISTOR 2SA1162
Q656	8-729-216-22	TRANSISTOR 2SA1162
Q657	8-729-901-01	TRANSISTOR DTC144EK
Q670	8-729-102-08	TRANSISTOR 2SC2223-F14
Q671	8-729-901-78	TRANSISTOR 2SC2412K-R
Q672	8-729-901-78	TRANSISTOR 2SC2412K-R
Q673	8-729-901-78	TRANSISTOR 2SC2412K-R
Q701	8-729-216-22	TRANSISTOR 2SA1037K-R

LR-10	
D201	B-4
D202	B-3
D203	B-1
D205	B-2
D206	D-4
D208	B-5
D209	B-5
D210	C-5
D211	C-5
IC651	C-8
IC652	C-7
IC653	A-8
IC701	C-12
IC702	B-13
IC703	B-14
Q007	C-13
Q008	C-13
Q010	B-8
Q201	A-4
Q202	B-4
Q203	B-4
Q204	B-4
Q205	B-3
Q206	B-3
Q207	C-2
Q208	B-2
Q209	B-2
Q210	B-2
Q211	C-2
Q212	C-2
Q213	C-3
Q214	D-2
Q215	C-2
Q216	D-3
Q217	C-3
Q218	C-4
Q219	C-4
Q220	C-4
Q221	C-5
Q222	C-4
Q223	B-5
Q224	C-5
Q225	D-5
Q226	D-5
Q281	D-9
Q280	D-10
Q501	B-11
Q502	B-11
Q503	B-10
Q504	B-9
Q506	B-9
Q551	C-11
Q552	D-10
Q553	C-9
Q554	D-8
Q555	D-7
Q556	D-6
Q601	C-11
Q602	C-10
Q603	C-9
Q604	C-8
Q605	C-7
Q607	C-6
Q652	A-6
Q653	A-7
Q654	A-7
Q655	B-7
Q656	A-7
Q657	B-8
Q670	A-10
Q671	A-10
Q672	A-11
Q673	A-11
Q701	A-14

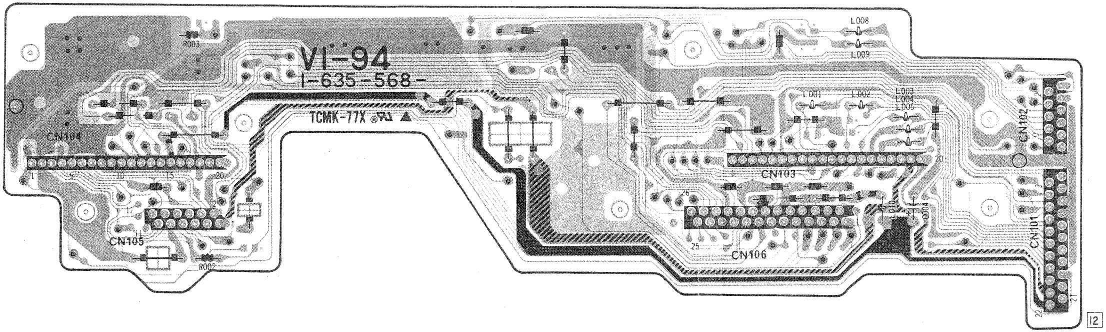
LR-10 BOARD

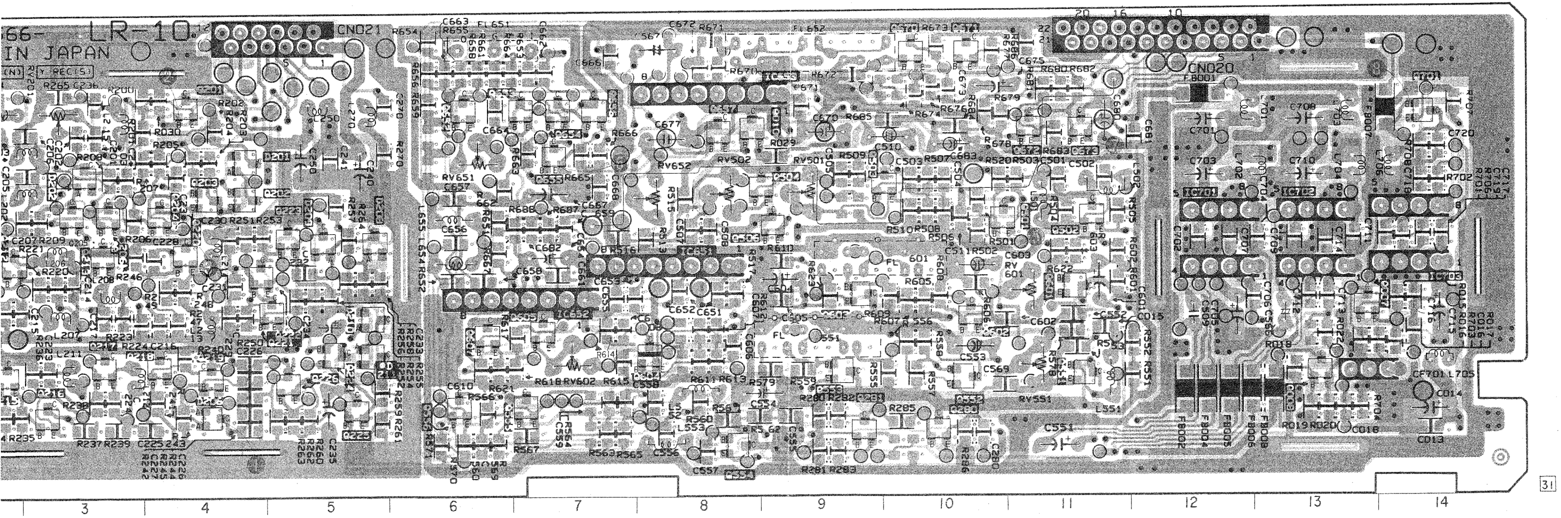


) VI-94 (RELAY) PRINTED WIRING BOARDS

-94 BOARD : 6000 series—

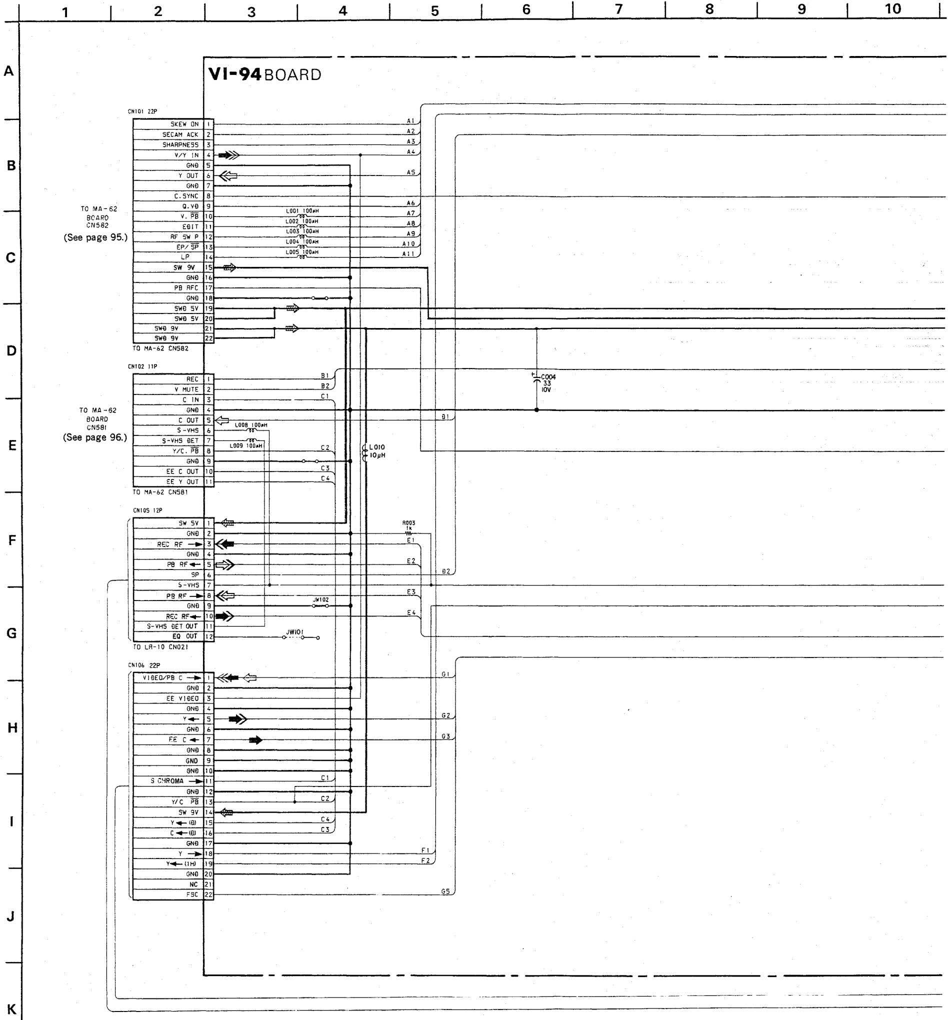
VI-94 BOARD

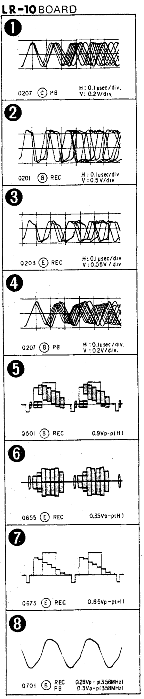

VI-94
1-635-568-
TCMK-77X
CN104
CN105
CN103
CN106
CN102
CN101
R002
R003
L001
L002
L003
L004
L005
L008
L009
12


LR-10
IN JAPAN
CN021
CN020
IC551
IC651
IC652
IC701
IC702
IC703
FL651
FL652
RV501
RV502
RV551
RV601
RV602
RV651
RV652
31
3
4
5
6
7
8
9
10
11
12
13
14

LR-10 (Y/CHROMA SEP, RF PROCESS) VI-94 (RELAY) SCHEMATIC DIAGRAM

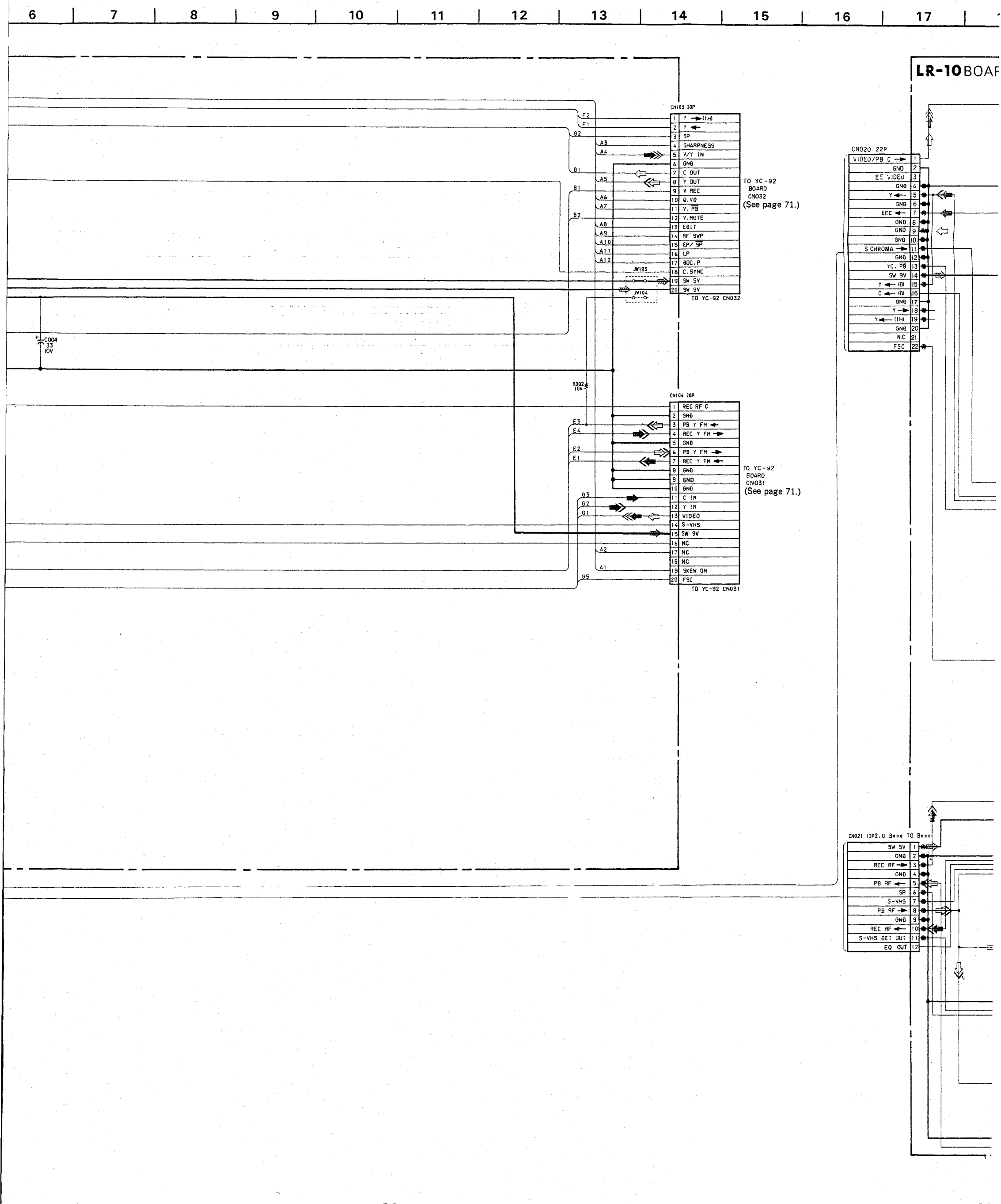
—Ref. No. LR-10 BOARD : 5000 series, VI-94 BOARD : 6000 series—

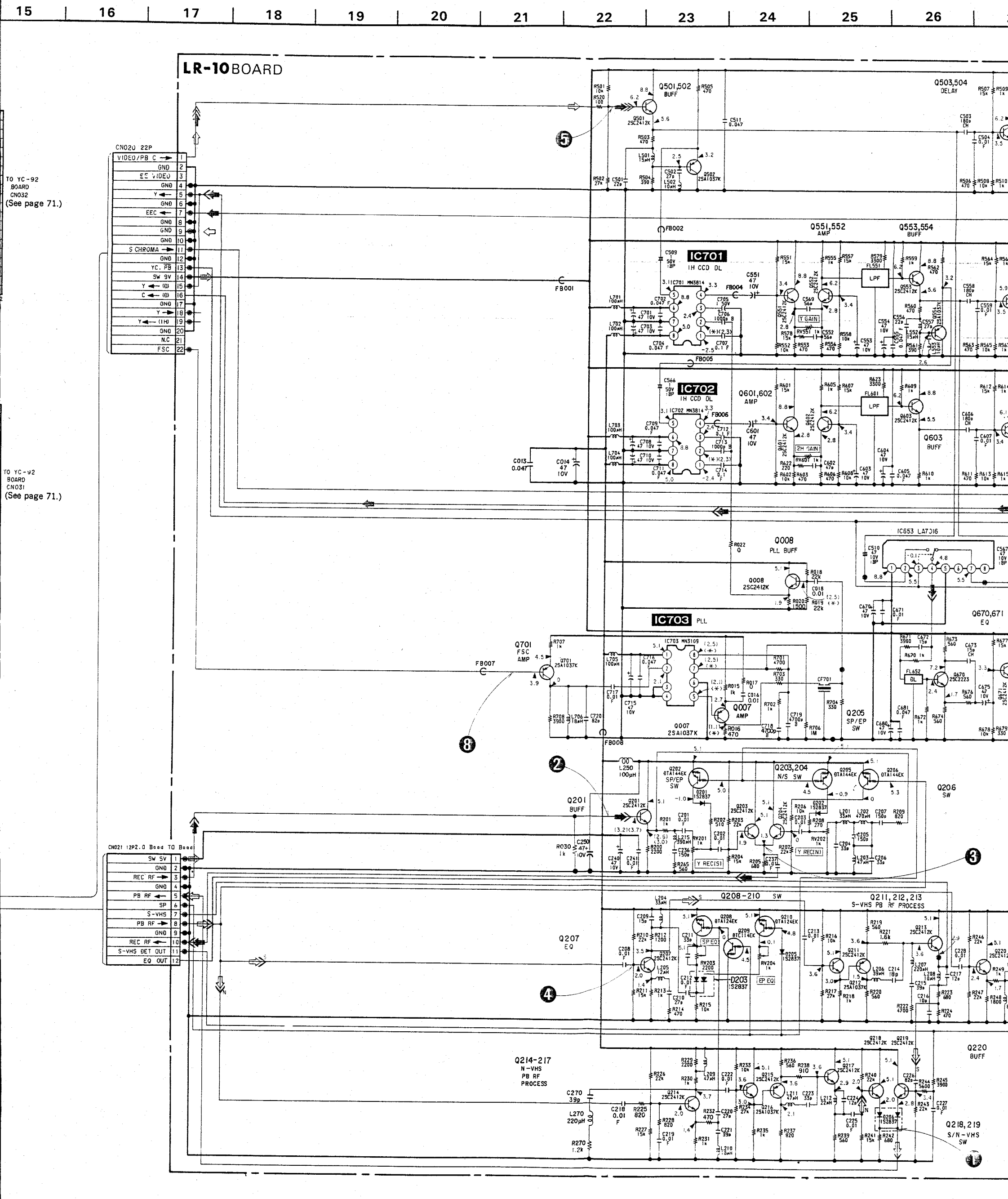

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
K
VI-94 BOARD
CN101 22P
SKEW ON 1
SECAM ACK 2
SHARPNESS 3
V/Y IN 4
GND 5
Y OUT 6
GND 7
C.SYNC 8
Q.VD 9
V. PB 10
EDIT 11
RF SW P 12
EP/SP 13
LP 14
SW 9V 15
GND 16
PB AFC 17
GND 18
SWD 5V 19
SWD 5V 20
SWD 9V 21
SWD 9V 22
TO MA-62 BOARD CN582
(See page 95.)
TO MA-62 CN582
L001 100μH
L002 100μH
L003 100μH
L004 100μH
L005 100μH
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
CN102 11P
REC 1
V MUTE 2
C IN 3
GND 4
C OUT 5
S-VHS 6
S-VHS DET 7
Y/C. PB 8
GND 9
EE C OUT 10
EE Y OUT 11
TO MA-62 BOARD CN581
(See page 96.)
TO MA-62 CN581
L008 100μH
L009 100μH
L010 10μH
B1
B2
C1
C2
C3
C4
D1
D2
C004 33 10V
CN105 12P
SW 5V 1
GND 2
REC RF → 3
GND 4
PB RF ← 5
SP 6
S-VHS 7
PB RF → 8
GND 9
REC RF ← 10
S-VHS DET OUT 11
EQ OUT 12
TO LR-10 CN021
R003 1k
E1
E2
E3
E4
JW101
JW102
CN106 22P
VIDEO/PB C → 1
GND 2
EE VIDEO 3
GND 4
Y ← 5
GND 6
FE C ← 7
GND 8
GND 9
GND 10
S CHROMA → 11
GND 12
Y/C PB 13
SW 9V 14
Y ← (D) 15
C ← (D) 16
GND 17
Y → 18
Y ← (1H) 19
GND 20
NC 21
FSC 22
F1
F2
G1
G2
G3
G5

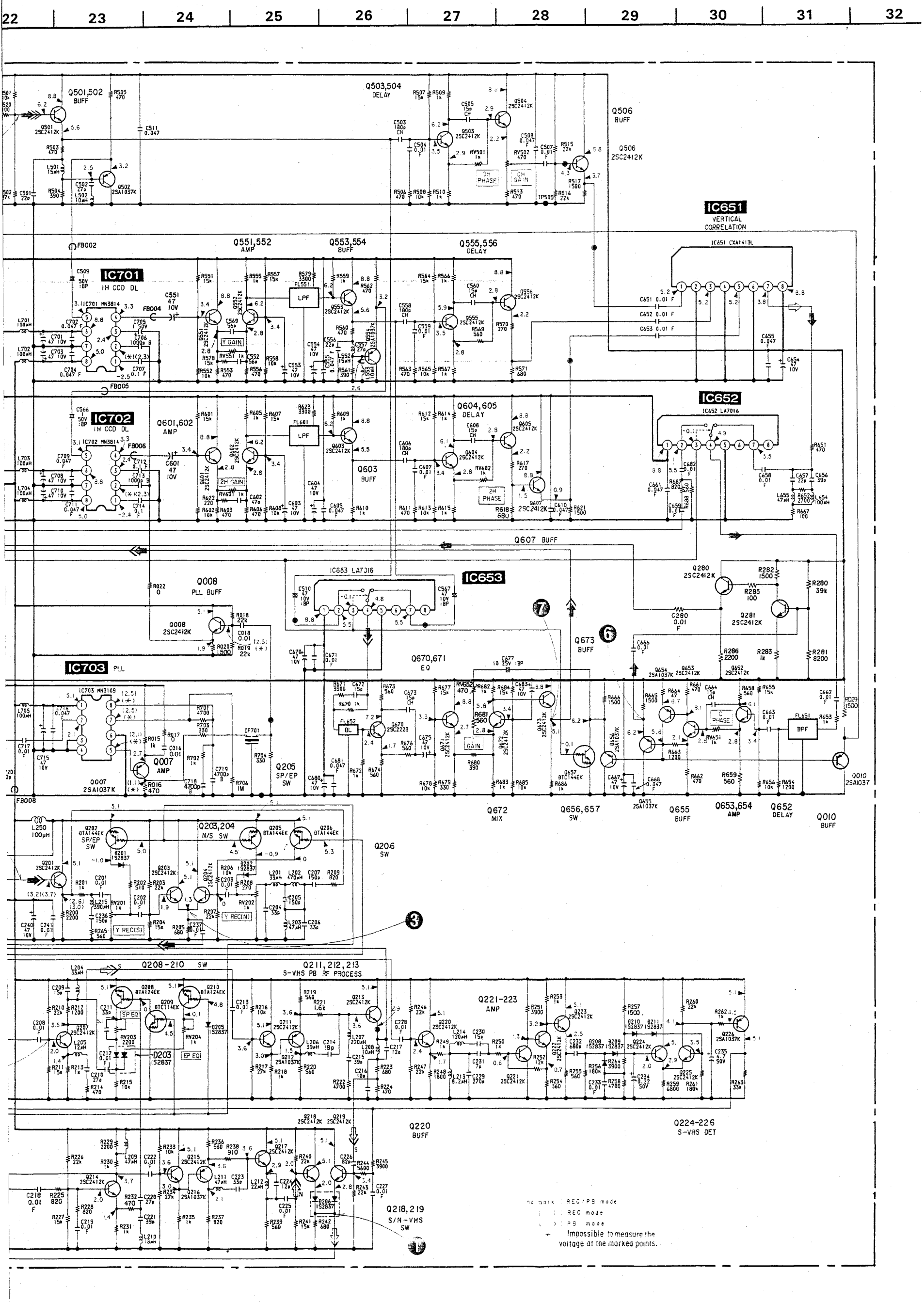


- **Signal path**

	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	➡
PB	⇨	⇨	⇨


6
7
8
9
10
11
12
13
14
15
16
17
LR-10BOAR
C004
33
10V
F2
F1
02
A3
A4
01
A5
B1
A6
A7
B2
A8
A9
A10
A11
A12
JW103
JW104
CN103 20P
1 Y → (1H)
2 Y ←
3 SP
4 SHARPNESS
5 V/Y IN
6 GND
7 C OUT
8 Y OUT
9 Y REC
10 Q.VD
11 V. PB
12 V.MUTE
13 EDIT
14 RF SWP
15 EP/ SP
16 LP
17 DOC.P
18 C.SYNC
19 SW 5V
20 SW 9V
TO YC-92 CN032
TO YC-92 BOARD CN032 (See page 71.)
R002 10k
E3
E4
E2
E1
G3
G2
G1
A2
A1
G5
CN104 20P
1 REC RF C
2 GND
3 PB Y FM ←
4 REC Y FM →
5 GND
6 PB Y FM →
7 REC Y FM ←
8 GND
9 GND
10 GND
11 C IN
12 Y IN
13 VIDEO
14 S-VHS
15 SW 9V
16 NC
17 NC
18 NC
19 SKEW ON
20 FSC
TO YC-92 CN031
TO YC-92 BOARD CN031 (See page 71.)
CN020 22P
VIDEO/PB C → 1
GND 2
EE VIDEO 3
GND 4
Y ← 5
GND 6
EEC ← 7
GND 8
GND 9
GND 10
S CHROMA → 11
GND 12
YC. PB 13
SW 9V 14
Y ← (D) 15
C ← (D) 16
GND 17
Y → 18
Y ← (1H) 19
GND 20
N.C 21
FSC 22
CN021 12P2.0 Baaa TO Baad
SW 5V 1
GND 2
REC RF → 3
GND 4
PB RF ← 5
SP 6
S-VHS 7
PB RF → 8
GND 9
REC RF ← 10
S-VHS DET OUT 11
EQ OUT 12


15
16
17
18
19
20
21
22
23
24
25
26
LR-10BOARD
CN020 22P
TO YC-92 BOARD CN032 (See page 71.)
TO YC-92 BOARD CN031 (See page 71.)
CN021 12P2.0 Bood TO Bood
VIDEO/PB C
EE VIDEO
EEC
S CHROMA
YC. PB
SW 9V
FSC
SW 5V
REC RF
PB RF
SP
S-VHS
S-VHS DET OUT
EQ OUT
GND
N.C
Q501,502 BUFF
Q503,504 DELAY
Q551,552 AMP
Q553,554 BUFF
IC701 1H CCD DL
IC702 1H CCD DL
Q601,602 AMP
Q603 BUFF
IC653 LA7016
Q008 PLL BUFF
IC703 PLL
Q670,671 EQ
Q701 FSC AMP
Q007 AMP
Q205 SP/EP SW
Q201 BUFF
Q202 SP/EP SW
Q203,204 N/S SW
Q206 SW
Q207 EQ
Q208-210 SW
Q211,212,213 S-VHS PB RF PROCESS
Q214-217 N-VHS PB RF PROCESS
Q218,219 S/N-VHS SW
Q220 BUFF
LPF
Y GAIN
2H GAIN
Y REC(S)
Y REC(N)
SP EQ
EP EQ
FB001
FB002
FB004
FB005
FB006
FB007
FB008
1
2
3
4
5
8


22
23
24
25
26
27
28
29
30
31
32
Q501,502 BUFF
Q503,504 DELAY
Q506 BUFF
IC651 VERTICAL CORRELATION
IC651 CXA1413L
IC701 1H CCD DL
IC701 MN3814
Q551,552 AMP
Q553,554 BUFF
Q555,556 DELAY
LPF
Y GAIN
2H PHASE
2H GAIN
IC652
IC652 LA7016
IC702 1H CCD DL
IC702 MN3814
Q601,602 AMP
Q603 BUFF
Q604,605 DELAY
Q607 BUFF
IC653
IC653 LA7016
Q008 PLL BUFF
IC703 PLL
IC703 MN3109
Q007 AMP
Q205 SP/EP SW
Q670,671 EQ
Q673 BUFF
Q280
Q281
Q672 MIX
Q656,657 SW
Q655 BUFF
Q653,654 AMP
Q652 DELAY
Q010 BUFF
DL
GAIN
C PHASE
BPF
Q202 SP/EP SW
Q203,204 N/S SW
Q206 SW
Y REC(S)
Y REC(N)
Q208-210 SW
Q211,212,213 S-VHS PB RF PROCESS
SP EQ
EP EQ
D203
Q221-223 AMP
Q220 BUFF
Q224-226 S-VHS DET
Q218,219 S/N-VHS SW
③
⑥
⑦

no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
* Impossible to measure the voltage at the marked points.

• Signal path

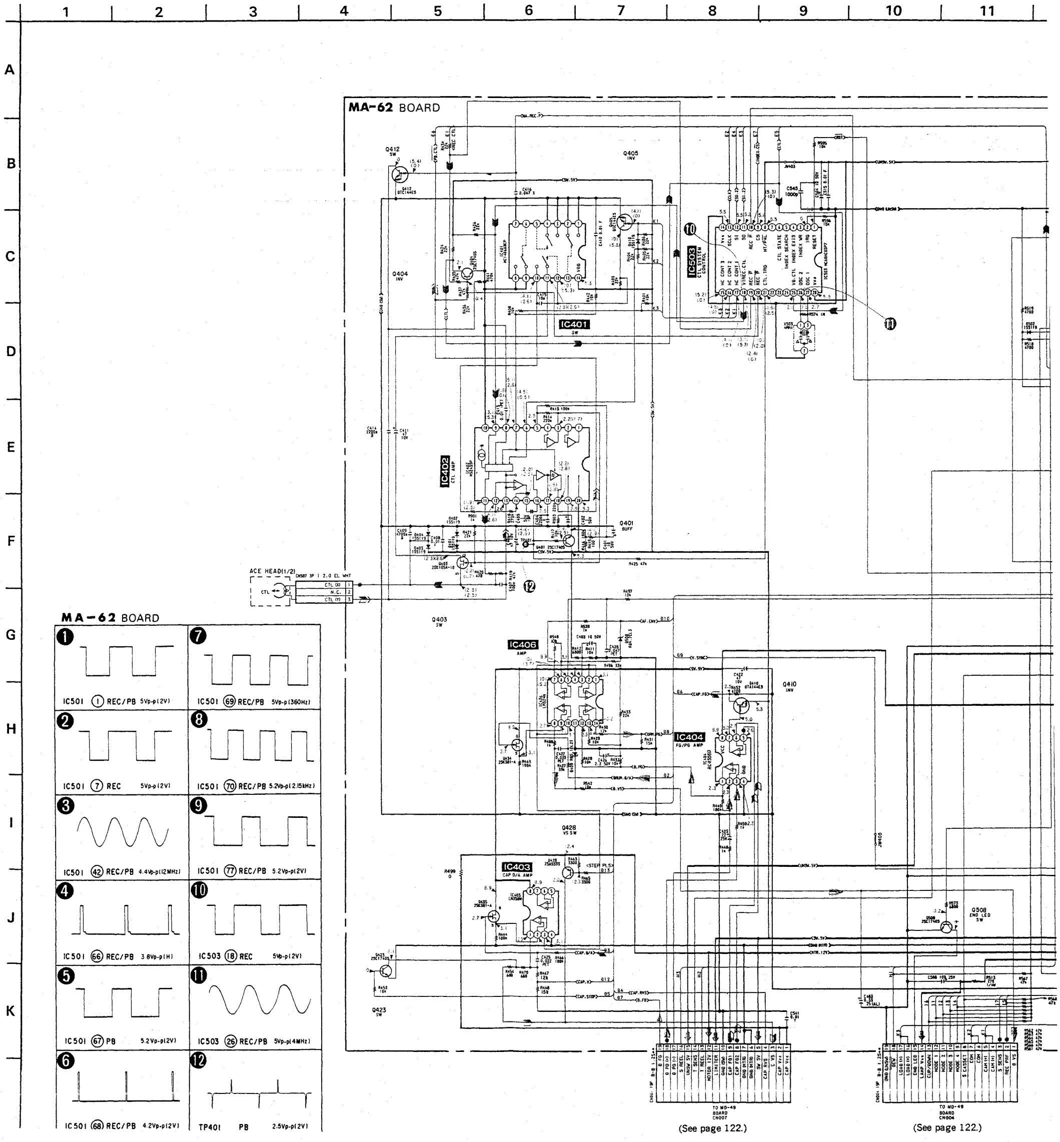
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡»»	➡
PB	⇨	⇨»	⇨»»	⇨

• Signal path

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷»	
Drum servo(speed and phase)		▷»»	
Capstan speed servo		➣	
Capstan phase servo	➤»	➣»	⊃»
Capstan servo(speed and phase)		➣»»	
Ref.signal	➤	➣	⊃

MA-62 (SERVO, SYSTEM CONTROL, AUDIO) SCHEMATIC DIAGRAM

—Ref. No. MA-62 BOARD : 4000 series—


1
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7
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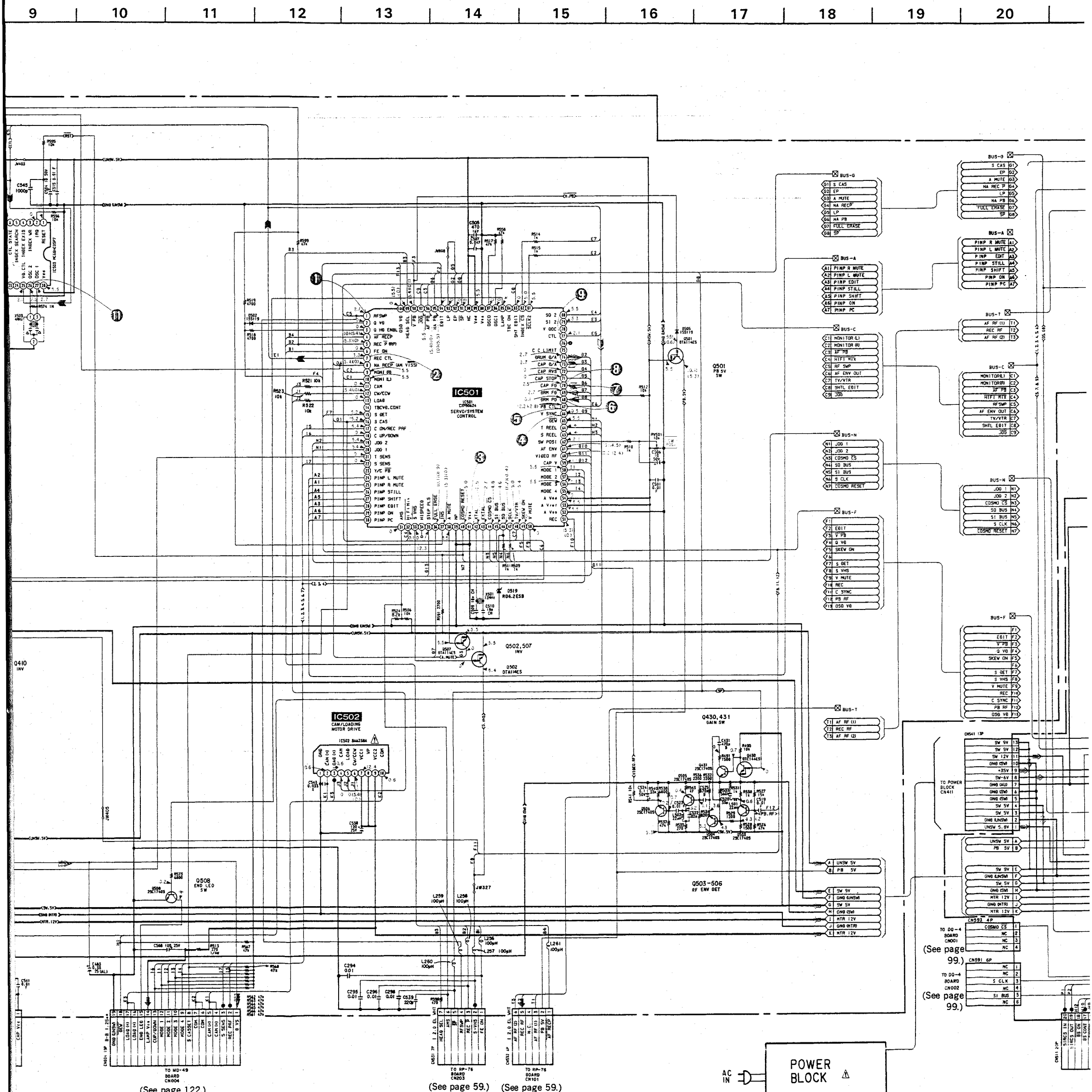
9
10
11
A
B
C
D
E
F
G
H
I
J
K
MA-62 BOARD
IC401 SW
IC402 CTL AMP
IC403 CAP D/A AMP
IC404 FG/PG AMP
IC406 AMP
IC503 CTL SYSTEM CONTROL
Q401 BUFF
Q403 SW
Q404 INV
Q405 INV
Q410 INV
Q412 SW
Q423 SW
Q428 VS SW
Q508 END LED SW
ACE HEAD(1/2)
CTL
CN587 3P I 2.0 EL WHT
CTL (X)
N.C.
CTL (Y)
TP401
JW403
JW405
TO MD-49 BOARD CN007
(See page 122.)
TO MD-49 BOARD CN006
(See page 122.)
MA-62 BOARD
❶ IC501 ① REC/PB 5Vp-p(2V)
❷ IC501 ⑦ REC 5Vp-p(2V)
❸ IC501 ㊷ REC/PB 4.4Vp-p(12MHz)
❹ IC501 (66) REC/PB 3.8Vp-p(H)
❺ IC501 (67) PB 5.2Vp-p(2V)
❻ IC501 (68) REC/PB 4.2Vp-p(2V)
❼ IC501 (69) REC/PB 5Vp-p(360Hz)
❽ IC501 (70) REC/PB 5.2Vp-p(2.15kHz)
❾ IC501 (77) REC/PB 5.2Vp-p(2V)
❿ IC503 ⑱ REC 5Vp-p(2V)
⓫ IC503 ㉖ REC/PB 5Vp-p(4MHz)
⓬ TP401 PB 2.5Vp-p(2V)

MA-62 BOARD

D291	8-719-91
D292	8-719-91
D293	8-719-91
D401	8-719-91
D402	8-719-91
D403	8-719-91
D404	8-719-91
D409	8-719-10
D410	8-719-91
D423	8-719-91
D501	8-719-91
D502	8-719-91
D505	8-719-91
D508	8-719-10
D516	8-719-91
D517	8-719-91
D518	8-719-20
D519	8-719-10
D703	8-719-91
D704	8-719-91
D803	8-719-91
D804	8-719-91
D807	8-719-91

ignal path

	REC	REC/PB	PB
um speed servo		▷	
um phase servo		▷▷	
um servo(speed and phase)		▷▷▷	
pstan speed servo		➢	
pstan phase servo	➤〉	➢〉	▷〉
pstan servo(speed and phase)		➢〉〉	
signal	➤	➢	▷


9
10
11
12
13
14
15
16
17
18
19
20
IC501
SERVO/SYSTEM CONTROL
IC502
CAM/LOADING MOTOR DRIVE
IC503 MC68HC05P7
Q501 PB 5V SW
Q502,507 INV
Q410 INV
Q430,431 GAIN SW
Q503-506 RF ENV DET
Q508 END LED SW
X501 12MHz
BUS-G
BUS-A
BUS-T
BUS-C
BUS-N
BUS-F
TO POWER BLOCK CN411
TO DD-4 BOARD CN001 (See page 99.)
TO DD-4 BOARD CN002 (See page 99.)
TO MD-49 BOARD CN004 (See page 122.)
TO RP-76 BOARD CN203 (See page 59.)
TO RP-76 BOARD CN101 (See page 59.)
POWER BLOCK ⚠
AC IN

MA-62 BOARD

DIODE

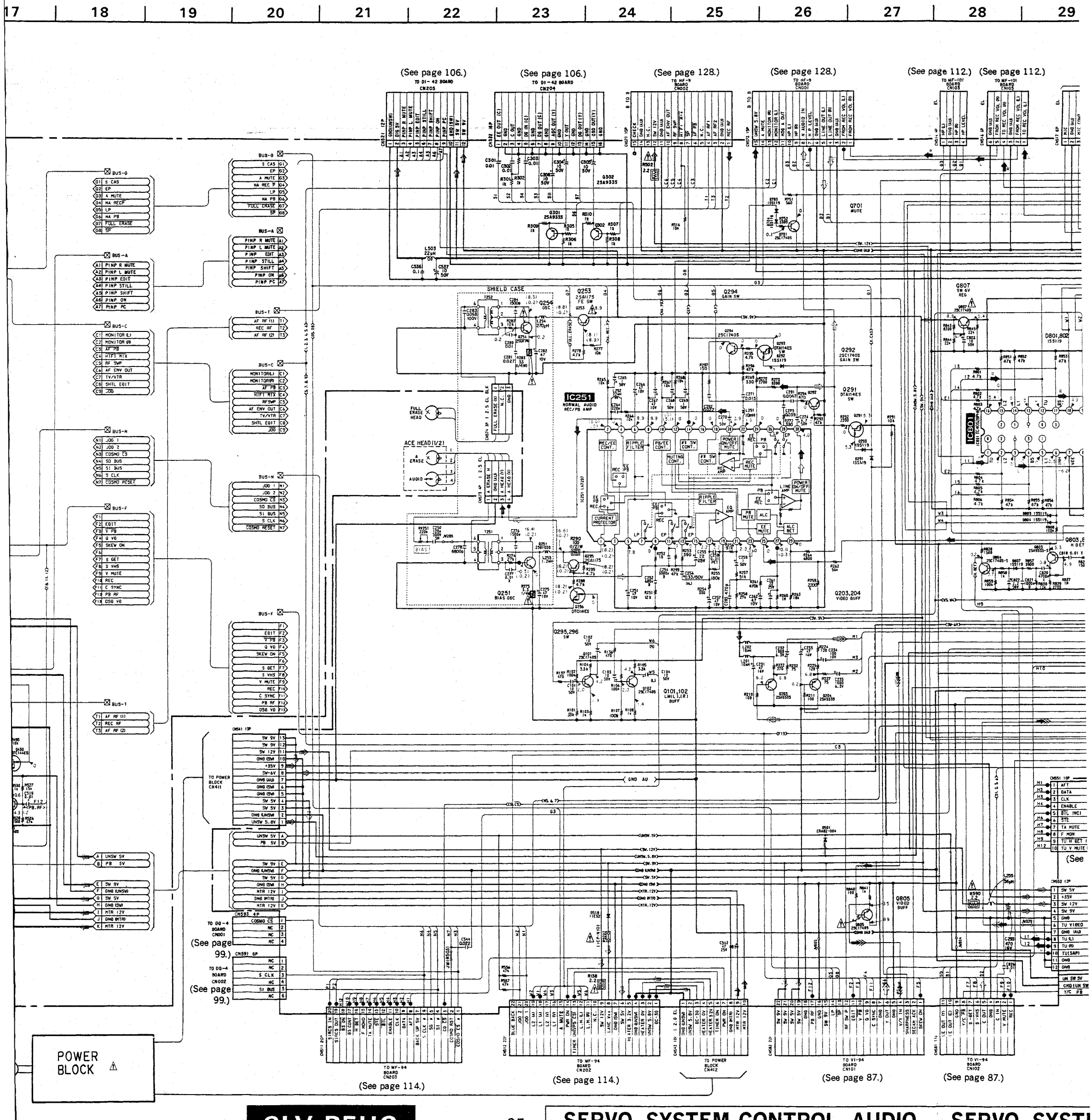
D291	8-719-911-19	DIODE 1SS119
D292	8-719-911-19	DIODE 1SS119
D293	8-719-911-19	DIODE 1SS119
D401	8-719-911-19	DIODE 1SS119
D402	8-719-911-19	DIODE 1SS119
D403	8-719-911-19	DIODE 1SS119
D404	8-719-911-19	DIODE 1SS119
D409	8-719-101-50	DIODE RD5.1EL2
D410	8-719-911-19	DIODE 1SS119
D423	8-719-911-19	DIODE 1SS119
D501	8-719-913-44	DIODE ERA82-004
D502	8-719-911-19	DIODE 1SS119
D505	8-719-911-19	DIODE 1SS119
D508	8-719-101-47	DIODE RD4.7EL2
D516	8-719-911-19	DIODE 1SS119
D517	8-719-911-19	DIODE 1SS119
D518	8-719-200-82	DIODE 11ES2
D519	8-719-109-93	DIODE RD6.2ES-B2
D703	8-719-911-19	DIODE 1SS119
D704	8-719-911-19	DIODE 1SS119
D803	8-719-911-19	DIODE 1SS119
D804	8-719-911-19	DIODE 1SS119
D807	8-719-911-19	DIODE 1SS119

IC

IC251	8-759-805-20	IC LA7297
IC401	8-759-000-49	IC MC14066BCP
IC402	8-759-632-58	IC M52435P
IC403	8-759-008-70	IC BA10358
IC404	8-759-981-85	IC RC4556D
IC406	8-759-938-12	IC BA10324
IC501	8-752-816-57	IC CXP80624-017Q
IC502	.8-759-983-45	IC BA6238A
IC503	8-759-035-36	IC MC68HC05P7
IC801	8-759-208-08	IC TC4052BPHB
IC802	8-759-923-90	IC BA4560
IC803	8-759-208-08	IC TC4052BPHB
IC804	8-759-923-90	IC BA4560
IC806	8-759-822-71	IC LA7954
IC809	8-759-822-71	IC LA7954

TRANSISTOR

Q101	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q102	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q203	8-729-920-68	TRANSISTOR 2SA933S-QR
Q204	8-729-920-68	TRANSISTOR 2SA933S-QR
Q251	8-729-102-03	TRANSISTOR 2SD1020
Q253	.8-729-119-76	TRANSISTOR 2SA1175-HFE
Q254	.8-729-140-96	TRANSISTOR 2SD774-34
Q291	8-729-900-61	TRANSISTOR DTA114ES
Q292	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q293	8-729-900-61	TRANSISTOR DTA114ES
Q294	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q295	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q296	8-729-900-80	TRANSISTOR DTC114ES
Q301	8-729-920-68	TRANSISTOR 2SA933S-QR
Q302	8-729-920-68	TRANSISTOR 2SA933S-QR
Q401	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q403	8-729-115-10	TRANSISTOR 2SK105A-10
Q404	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q405	8-729-900-89	TRANSISTOR DTC144ES
Q410	8-729-900-65	TRANSISTOR DTA144ES
Q412	8-729-900-89	TRANSISTOR DTC144ES
Q423	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q428	8-729-920-68	TRANSISTOR 2SA933S-QR
Q430	8-729-900-89	TRANSISTOR DTC144ES
Q431	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q434	8-729-601-47	TRANSISTOR 2SK381TP-A
Q435	8-729-601-47	TRANSISTOR 2SK381TP-A
Q501	8-729-900-61	TRANSISTOR DTA114ES
Q502	8-729-900-61	TRANSISTOR DTA114ES
Q503	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q504	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q505	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q506	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q507	8-729-900-61	TRANSISTOR DTA114ES
Q508	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q514	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q515	8-729-	
Q516	8-729-	
Q517	8-729-	
Q518	8-729-	
Q519	8-729-	
Q701	8-729-	
Q801	8-729-	
Q802	8-729-	
Q803	8-729-	
Q804	8-729-	
Q805	.8-729-	
Q807	.8-729-	


17
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29
(See page 106.)
TO DI-42 BOARD CN205
(See page 106.)
TO DI-42 BOARD CN204
(See page 128.)
TO HF-9 BOARD CN002
(See page 128.)
TO HF-9 BOARD CN001
(See page 112.)
TO MF-101 BOARD CN103
(See page 112.)
TO MF-101 BOARD CN105
BUS-O
BUS-A
BUS-T
BUS-C
BUS-N
BUS-F
SHIELD CASE
FULL ERASE HEAD
ACE HEAD(1/2)
IC251
NORMAL AUDIO REC/PB AMP
IC801
Q251 BIAS OSC
Q254 OSC
Q253 FE SW
Q294 GAIN SW
Q292 GAIN SW
Q291 SW
Q701 MUTE
Q807 SW 6V REG
Q295,296 SW
Q101,102 LMIL L(R) BUFF
Q203,204 VIDEO BUFF
Q805 VIDEO BUFF
TO POWER BLOCK CN411
TO DD-4 BOARD CN001
(See page 99.)
TO DD-4 BOARD CN002
(See page 99.)
TO MF-94 BOARD CN203
(See page 114.)
TO MF-94 BOARD CN202
(See page 114.)
TO POWER BLOCK CN412
TO VI-94 BOARD CN101
(See page 87.)
TO VI-94 BOARD CN102
(See page 87.)
POWER BLOCK

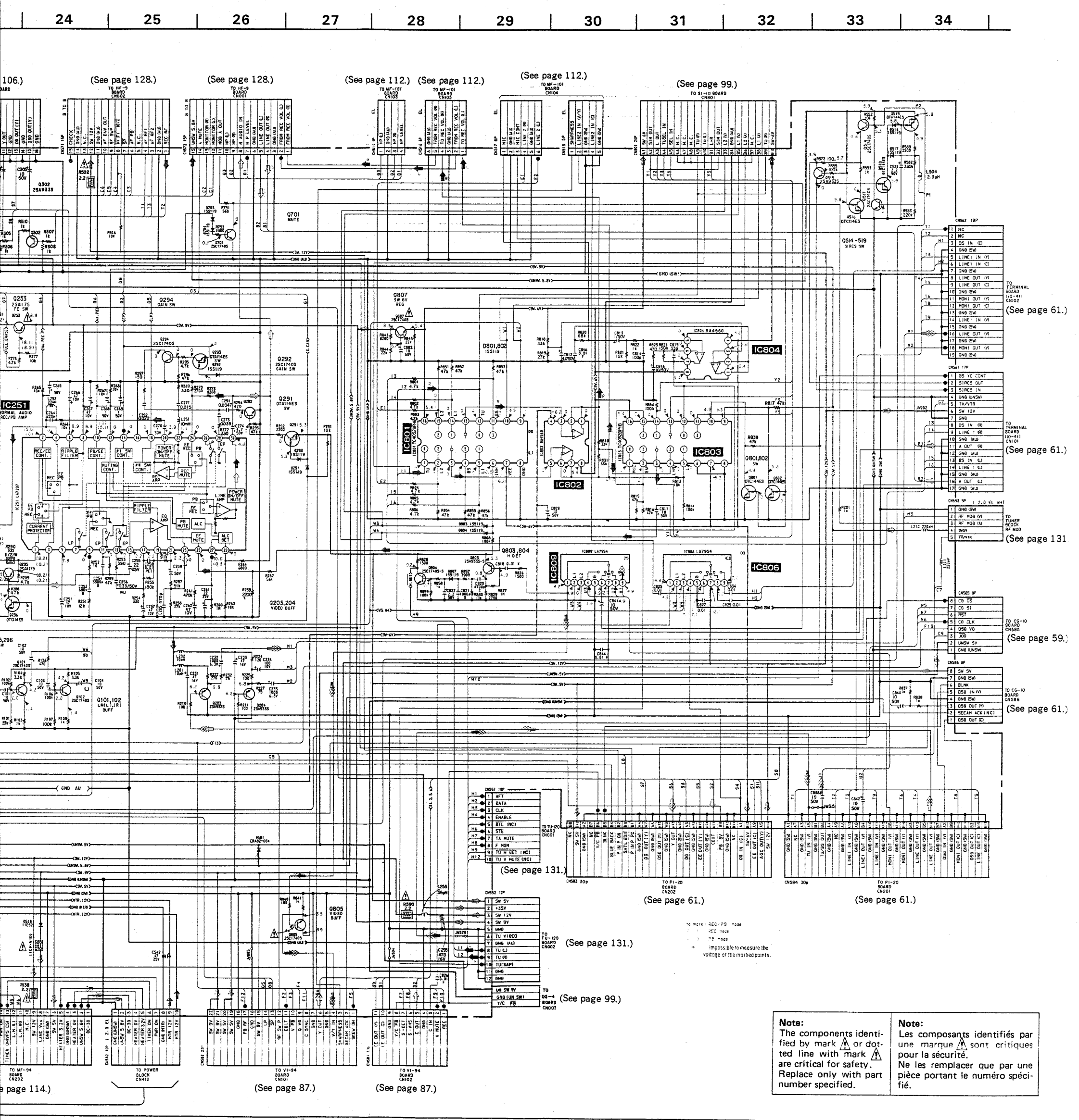
IC

8-759-805-20	IC LA7297
8-759-000-49	IC MC14066BCP
8-759-632-58	IC M52435P
8-759-008-70	IC BA10358
8-759-981-85	IC RC4556D
8-759-938-12	IC BA10324
8-752-816-57	IC CXP80624-017Q
8-759-983-45	IC BA6238A
8-759-035-36	IC MC68HC05P7
8-759-208-08	IC TC4052BPHB
8-759-923-90	IC BA4560
8-759-208-08	IC TC4052BPHB
8-759-923-90	IC BA4560
8-759-822-71	IC LA7954
8-759-822-71	IC LA7954

TRANSISTOR

8-729-920-70	TRANSISTOR 2SC1740S-QR
8-729-920-70	TRANSISTOR 2SC1740S-QR
8-729-920-68	TRANSISTOR 2SA933S-QR
8-729-920-68	TRANSISTOR 2SA933S-QR
8-729-102-03	TRANSISTOR 2SD1020
8-729-119-76	TRANSISTOR 2SA1175-HFE
8-729-140-96	TRANSISTOR 2SD774-34
8-729-900-61	TRANSISTOR DTA114ES

Q292	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q293	8-729-900-61	TRANSISTOR DTA114ES
Q294	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q295	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q296	8-729-900-80	TRANSISTOR DTC114ES
Q301	8-729-920-68	TRANSISTOR 2SA933S-QR
Q302	8-729-920-68	TRANSISTOR 2SA933S-QR
Q401	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q403	8-729-115-10	TRANSISTOR 2SK105A-10
Q404	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q405	8-729-900-89	TRANSISTOR DTC144ES
Q410	8-729-900-65	TRANSISTOR DTA144ES
Q412	8-729-900-89	TRANSISTOR DTC144ES
Q423	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q428	8-729-920-68	TRANSISTOR 2SA933S-QR
Q430	8-729-900-89	TRANSISTOR DTC144ES
Q431	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q434	8-729-601-47	TRANSISTOR 2SK381TP-A
Q435	8-729-601-47	TRANSISTOR 2SK381TP-A
Q501	8-729-900-61	TRANSISTOR DTA114ES
Q502	8-729-900-61	TRANSISTOR DTA114ES
Q503	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q504	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q505	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q506	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q507	8-729-900-61	TRANSISTOR DTA114ES
Q508	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q514	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q515	8-729-920-68	TRANSISTOR 2SA933S-QR
Q516	8-729-900-80	TRANSISTOR DTC114ES
Q517	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q518	8-729-900-89	TRANSISTOR DTC144ES
Q519	8-729-900-65	TRANSISTOR DTA144ES
Q701	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q801	8-729-900-89	TRANSISTOR DTC144ES
Q802	8-729-900-89	TRANSISTOR DTC144ES
Q803	8-729-920-68	TRANSISTOR 2SA933S-QR
Q804	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q805	.8-729-920-70	TRANSISTOR 2SC1740S-QR
Q807	.8-729-920-70	TRANSISTOR 2SC1740S-QR


24
25
26
27
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29
30
31
32
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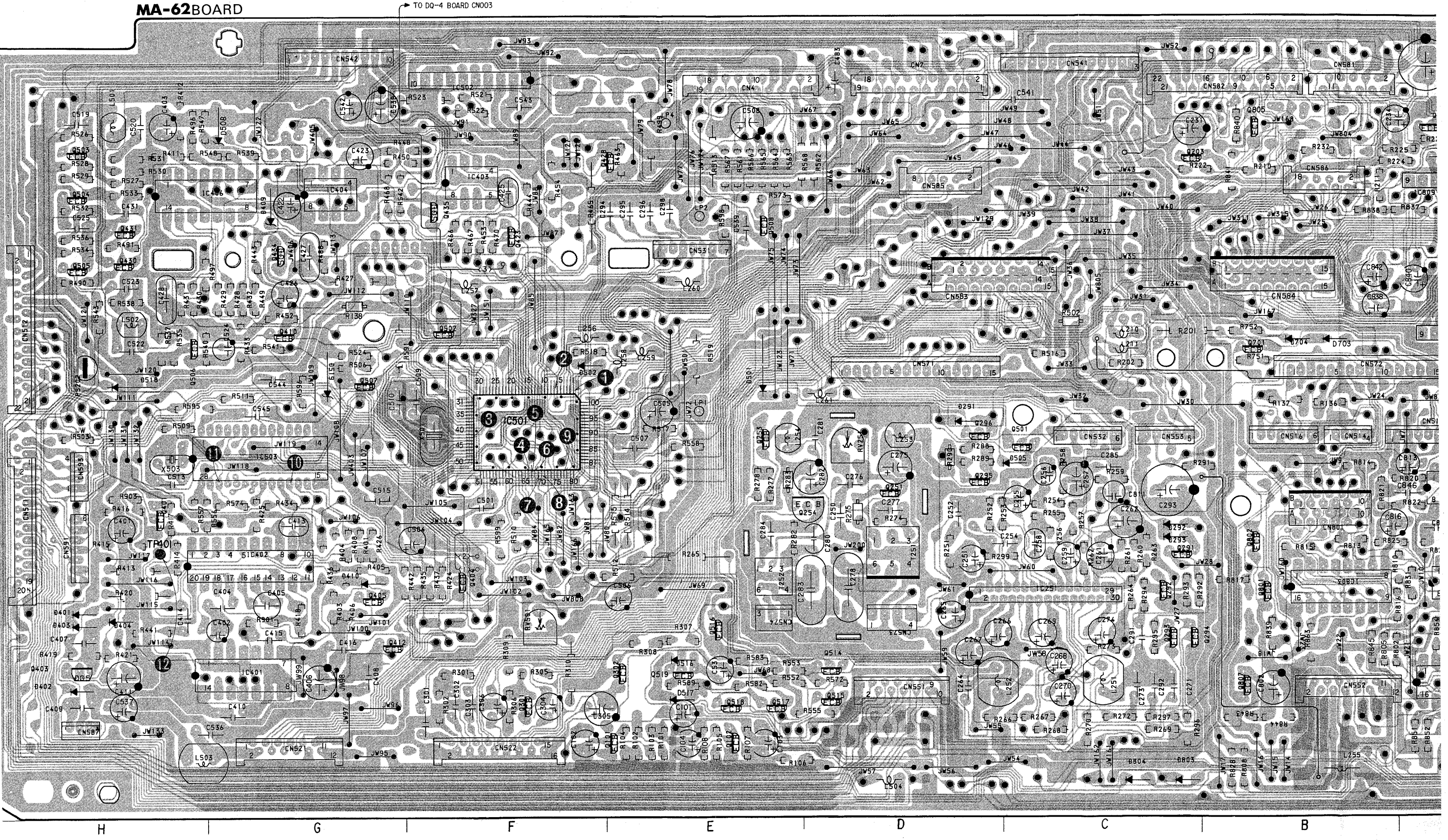
34
106.)
(See page 128.)
TO MF-9 BOARD CN002
(See page 128.)
TO MF-9 BOARD CN001
(See page 112.)
TO MF-101 BOARD CN103
(See page 112.)
TO MF-101 BOARD CN105
(See page 112.)
TO MF-101 BOARD CN104
(See page 99.)
TO SI-10 BOARD CN801
CN571 15P
CN572 15P
CN513 4P
CN514 4P
CN517 6P
CN515 5P
CN801 20P
CN562 19P
TO TERMINAL BOARD (IO-41) CN102
(See page 61.)
CN561 17P
TO TERMINAL BOARD (IO-41) CN101
(See page 61.)
CN553 5P
TO TUNER BLOCK RF MOD
(See page 131
CN585 8P
TO CG-10 BOARD CN585
(See page 59.)
CN586 8P
TO CG-10 BOARD CN586
(See page 61.)
IC251
NORMAL AUDIO REC/PB AMP
IC801
IC802
IC803
IC804
IC806
IC809
Q701 MUTE
Q807 SW 6V REG
Q294 GAIN SW
Q292 2SC1740S GAIN SW
Q291 DTA114ES SW
Q203,204 VIDEO BUFF
Q101,102 LMIL(L),(R) BUFF
Q803,804 H DET
Q514-519 SIRCS SW
Q805 VIDEO BUFF
CN551 10P
TO TU-120 BOARD CN001
(See page 131.)
CN552 12P
TO TU-120 BOARD CN002
(See page 131.)
TO DQ-4 BOARD CN003
(See page 99.)
CN583 30P
TO PI-20 BOARD CN202
(See page 61.)
CN584 30P
TO PI-20 BOARD CN201
(See page 61.)
TO MF-94 BOARD CN202
(See page 114.)
CN542 10P
TO POWER BLOCK CN412
CN582 22P
TO VI-94 BOARD CN101
(See page 87.)
CN581 11P
TO VI-94 BOARD CN102
(See page 87.)
REC/PB mode
REC mode
PB mode
Impossible to measure the voltage of the marked points.

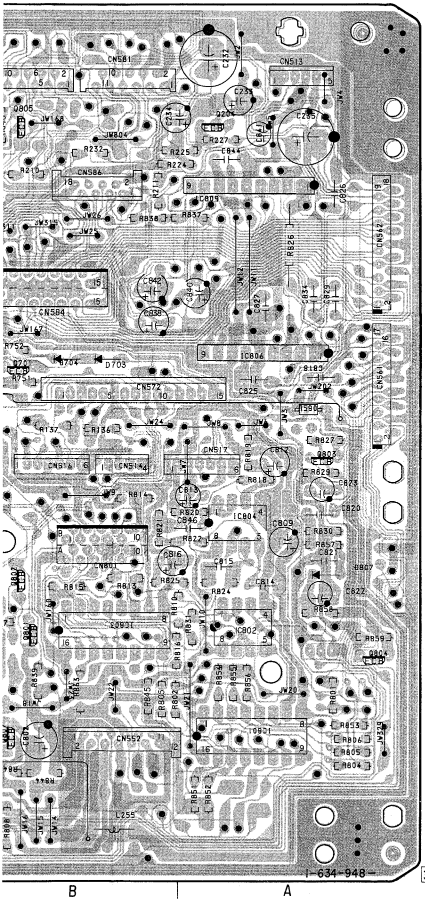
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

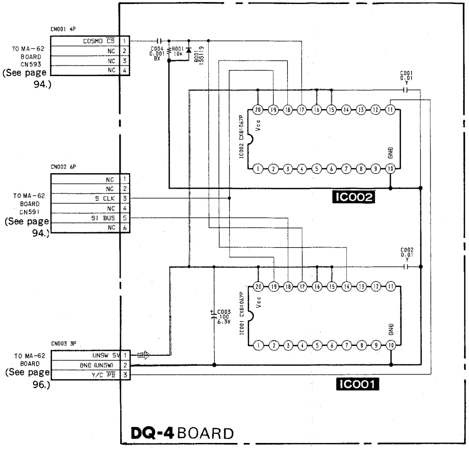
-62 (SERVO, SYSTEM CONTROL, AUDIO) PRINTED WIRING BOARDS, DQ-4, SI-10 (SWITCH) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

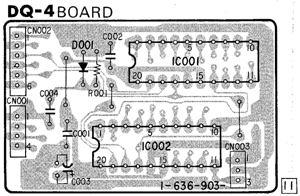
ef. No. DQ-4 BOARD : 10000 series, MA-62 and SI-10 BOARDS : 4000 series—


MA-62BOARD
TO DQ-4 BOARD CN003
CN542
IC502
CN4
CN7
CN541
CN582
CN581
IC406
IC404
IC403
CN531
CN583
CN584
CN571
CN572
IC501
IC503
CN512
CN511
CN591
CN593
IC402
IC401
CN532
CN553
CN516
CN514
CN801
IC801
IC251
CN574
CN573
CN551
CN552
CN587
CN521
CN522
CN586
CN585
TP101
X503
RV591
RV251
L503
L504
L255
H
G
F
E
D
C
B


CN581
CN513
CN586
CN584
CN572
CN516
CN514
CN517
CN552
CN801
IC806
IC804
IC802
IC803
C232
C233
C234
C235
Q204
Q805
Q701
Q803
Q804
D704
D703
D807
CN561
CN562
1-634-948-
31
B
A

MA-62	
D291	D-4
D292	C-3
D293	C-3
D401	H-3
D402	H-2
D403	H-2
D404	H-2
D409	G-7
D410	G-3
D501	E-5
D502	F-5
D505	C-4
D508	G-7
D516	E-2
D517	E-2
D518	H-5
D519	G-5
D703	B-5
D704	B-5
D803	C-1
D804	C-1
D807	A-3
IC251	C-3
IC401	G-2
IC402	G-3
IC403	F-7
IC404	G-7
IC406	G-7
IC501	F-4
IC502	F-8
IC503	G-4
IC801	A-2
IC802	A-3
IC803	B-3
IC804	A-4
IC806	A-5
IC809	A-7
Q101	E-1
Q102	E-1
Q203	C-7
Q204	A-7
Q251	D-4
Q253	E-4
Q254	D-4
Q291	C-3
Q292	C-3
Q293	C-2
Q294	C-2
Q295	D-4
Q296	D-4
Q301	F-2
Q302	E-2
Q401	H-4
Q403	H-2
Q404	F-3
Q405	G-3
Q410	G-5
Q412	G-2
Q423	F-6
Q428	F-7
Q430	H-6
Q431	H-6
Q434	G-6
Q435	F-7
Q501	C-4
Q502	F-5
Q503	H-7
Q504	H-7
Q505	H-6
Q506	H-5
Q507	G-5
Q508	E-6
Q514	D-2
Q515	D-2
Q516	E-2
Q517	E-2
Q518	E-2
Q519	E-2
Q701	B-5
Q801	B-3
Q802	B-3
Q803	A-4
Q804	A-3
Q805	B-7
Q807	B-2


CN001 4P
COSMO CS
NC
NC
NC
TO MA-62 BOARD CN593
(See page 94.)
C004 0.001 BX
R001 10k
D001 1SS119
C001 0.01
CN002 6P
NC
NC
S CLK
NC
SI BUS
NC
TO MA-62 BOARD CN591
(See page 94.)
IC002 CXD1067P
Vcc
GND
IC002
C002 0.01
C003 100 6.3V
IC001 CXD1067P
IC001
CN003 3P
UNSW 5V
GND (UNSW)
Y/C PB
TO MA-62 BOARD
(See page 96.)
DQ-4 BOARD


DQ-4 BOARD
CN002
D001
C002
IC001
C004
R001
CN001
C001
IC002
CN003
C003
1-636-903-
11

DQ-4 BOARD

DIODE

D001	8-719-911-19	DIODE 1SS119

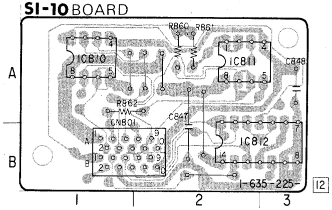
IC

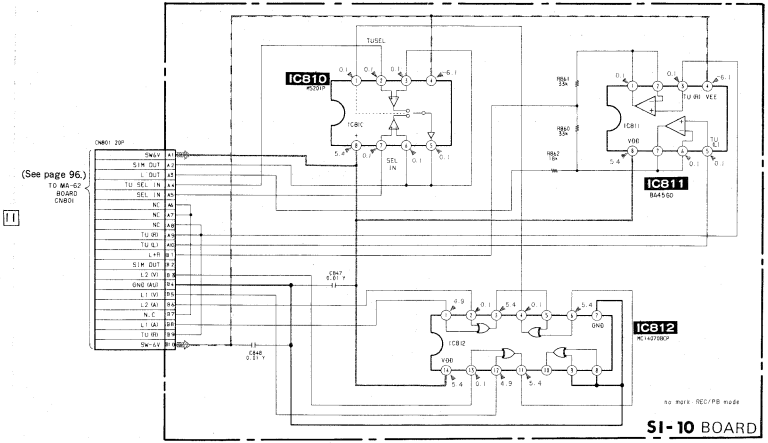
IC001	8-752-321-64	IC CXD1067P
IC002	8-752-321-64	IC CXD1067P

SI-10 BOARD

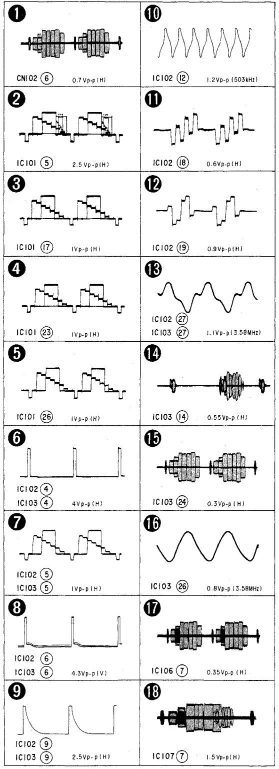
IC

IC810	8-759-602-49	IC M5201P
IC811	8-759-923-90	IC BA4560
IC812	8-759-040-70	IC MC14070BCP


SI-10 BOARD
R860
R861
IC810
IC811
C848
R862
CN801
C847
IC812
A
B
1-635-225-
12
1
2
3


CN801 20P
SW6V
SIM OUT
L OUT
TU SEL IN
SEL IN
NC
NC
NC
TU (R)
TU (L)
L+R
SIM OUT
L2 (V)
GND (AU)
L1 (V)
L2 (A)
N.C
L1 (A)
TU (R)
SW-6V
(See page 96.)
TO MA-62 BOARD CN801
TUSEL
IC810
M5201P
SEL IN
R861 33k
R860 33k
R862 18k
TU (R)
VEE
VDD
TU (L)
IC811
BA4560
C847 0.01 Y
C848 0.01 Y
IC812
MC14070BCP
GND
VDD
no mark : REC/PB mode
SI-10 BOARD

DG-10 BOARD E-E mode (P IN P)



DG-10 BOARD

DIODE

D101	8-719-400-18	DIODE MA152WK
D103	8-719-400-18	DIODE MA152WK
D104	8-719-400-18	DIODE MA152WK
D105	8-719-400-18	DIODE MA152WK
D106	8-719-400-18	DIODE MA152WK

IC

IC101	8-759-322-29	IC HA118088MP
IC102	8-759-322-31	IC HA11532MP
IC103	8-759-322-30	IC HA11525MP
IC104	8-759-322-33	IC HD49408
IC105	8-759-322-51	IC HM53461ZP-12
IC106	8-759-710-86	IC NJM2233BM
IC107	8-759-711-32	IC NJM2245M
IC108	8-759-008-74	IC MC14001BF

TRANSISTOR

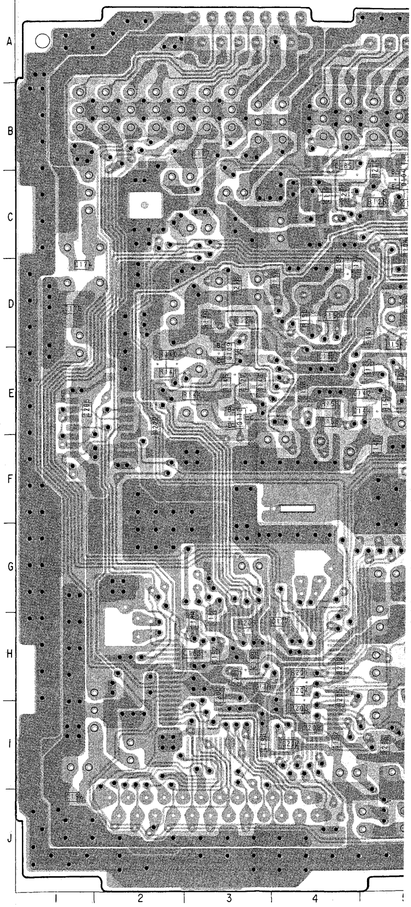
Q101	8-729-305-25	TRANSISTOR 2SA1052C
Q102	8-729-305-25	TRANSISTOR 2SA1052C
Q103	8-729-305-25	TRANSISTOR 2SA1052C
Q104	8-729-305-25	TRANSISTOR 2SA1052C
Q105	8-729-271-22	TRANSISTOR 2SC2712-G
Q106	8-729-271-22	TRANSISTOR 2SC2712-G
Q107	8-729-305-25	TRANSISTOR 2SA1052C
Q108	8-729-305-25	TRANSISTOR 2SA1052C
Q109	8-729-305-25	TRANSISTOR 2SA1052C
Q110	8-729-305-25	TRANSISTOR 2SA1052C
Q111	8-729-903-10	TRANSISTOR FMW1
Q112	8-729-901-00	TRANSISTOR DTC124EK
Q113	8-729-305-25	TRANSISTOR 2SA1052C
Q114	8-729-271-22	TRANSISTOR 2SC2712-G
Q116	8-729-305-25	TRANSISTOR 2SA1052C
Q117	8-729-271-22	TRANSISTOR 2SC2712-G
Q118	8-729-305-25	TRANSISTOR 2SA1052C
Q119	8-729-903-10	TRANSISTOR FMW1
Q120	8-729-901-00	TRANSISTOR DTC124EK
Q121	8-729-305-25	TRANSISTOR 2SA1052C
Q122	8-729-271-22	TRANSISTOR 2SC2712-G
Q123	8-729-901-00	TRANSISTOR DTC124EK

DG-10 (P IN P PROCESS), DI-42 (RELAY) PRINTED WIRING BOARDS

—Ref. No. DG-10 BOARD : 1000 series, DI-42 BOARD : 9000 series—

D101	D-11
D103	E-12
D104	J-7
D105	J-10
D106	D-6
IC101	C-10
IC102	E-13
IC103	G-11
IC104	H-14
IC105	J-15
IC106	C-13
IC107	C-13
IC108	E-16
Q101	C-6
Q102	B-6
Q103	C-7
Q104	C-5
Q105	D-10
Q106	D-7
Q107	E-7
Q108	D-5
Q109	E-3
Q110	E-3
Q111	E-12
Q112	E-12
Q113	D-6
Q114	E-12
Q116	E-8
Q117	F-12
Q118	F-8
Q119	I-10
Q120	I-7
Q121	I-7
Q122	J-11
Q123	I-10

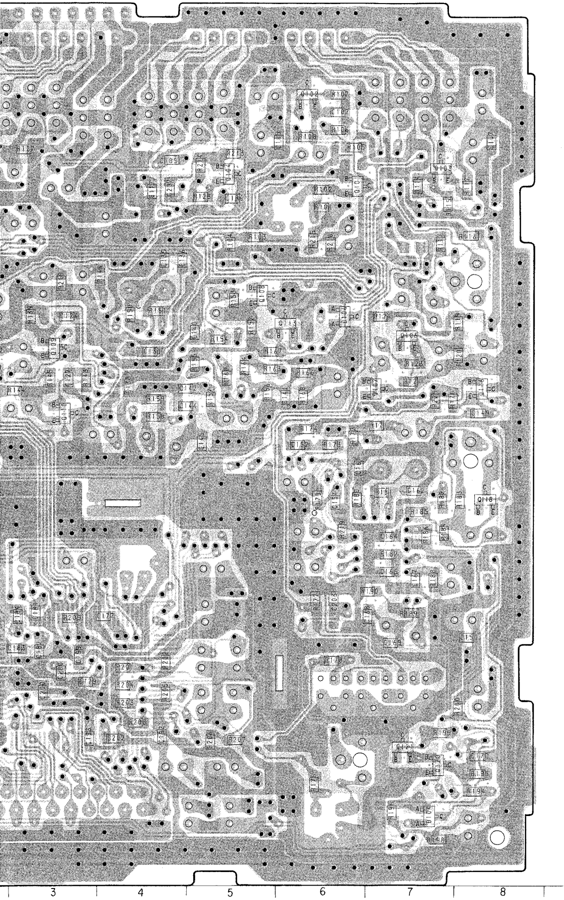
DG-10 BOARD (CONDUCTOR SIDE)



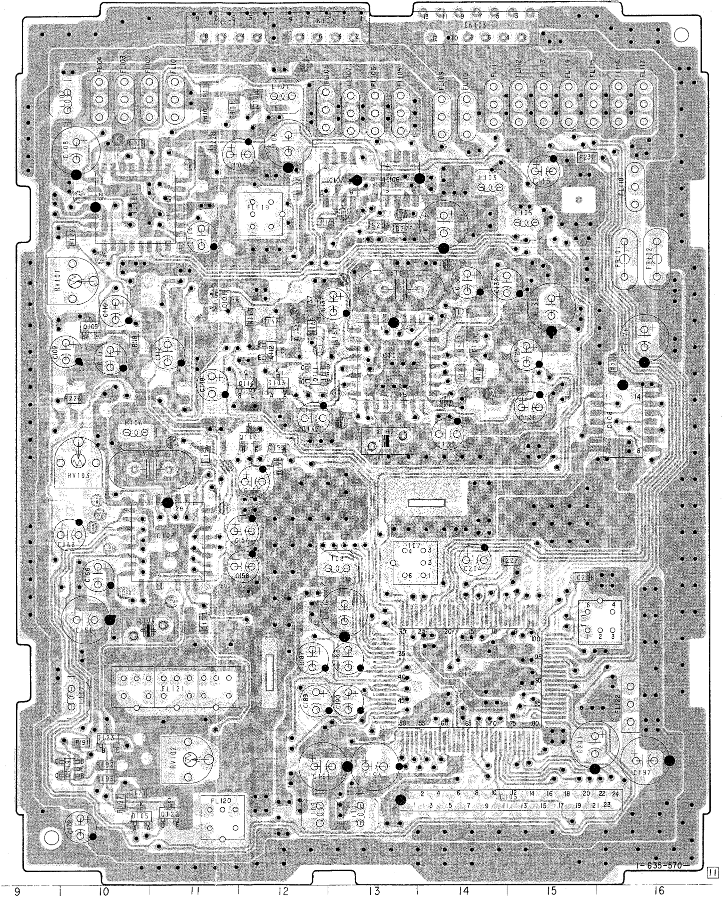
DI-42 (RELAY) PRINTED WIRING BOARDS

00 series, DI-42 BOARD : 9000 series—

UCTOR SIDE)



DG-10 BOARD (COMPONENT SIDE)


CN101
CN102
CN103
FL101
FL102
FL103
FL104
FL105
FL106
FL107
FL108
FL109
FL110
FL111
FL112
FL113
FL114
FL115
FL116
FL117
FL118
FL119
FL120
FL121
FL122
IC101
IC102
IC103
IC104
IC105
IC106
IC107
IC108
RV101
RV102
RV103
X101
X102
X103
1-635-570-11
9
10
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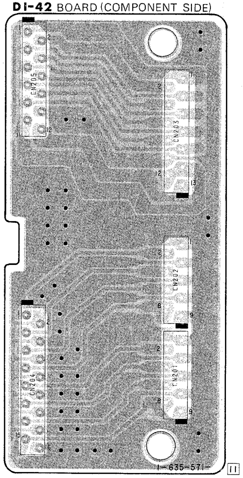
15
16

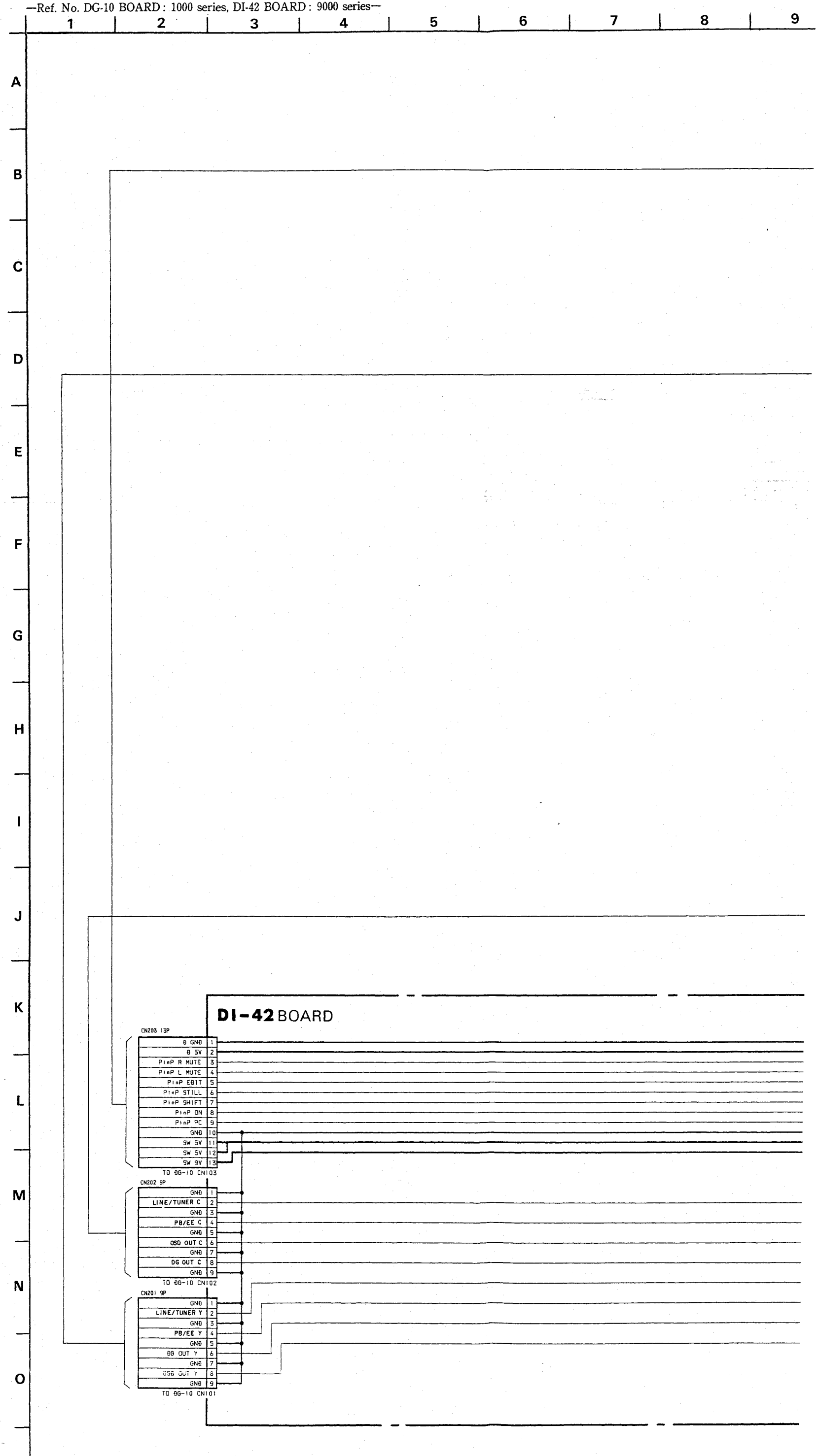
DI-42 BOARD (COMPONENT SIDE)


CN201
CN202
CN203
CN204
CN205
1-635-571-11

P IN P   P IN P

DG-10 (P IN P PROCESS), DI-42 (RELAY) SCHEMATIC DIAGRAM

—Ref. No. DG-10 BOARD: 1000 series, DI-42 BOARD: 9000 series—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A
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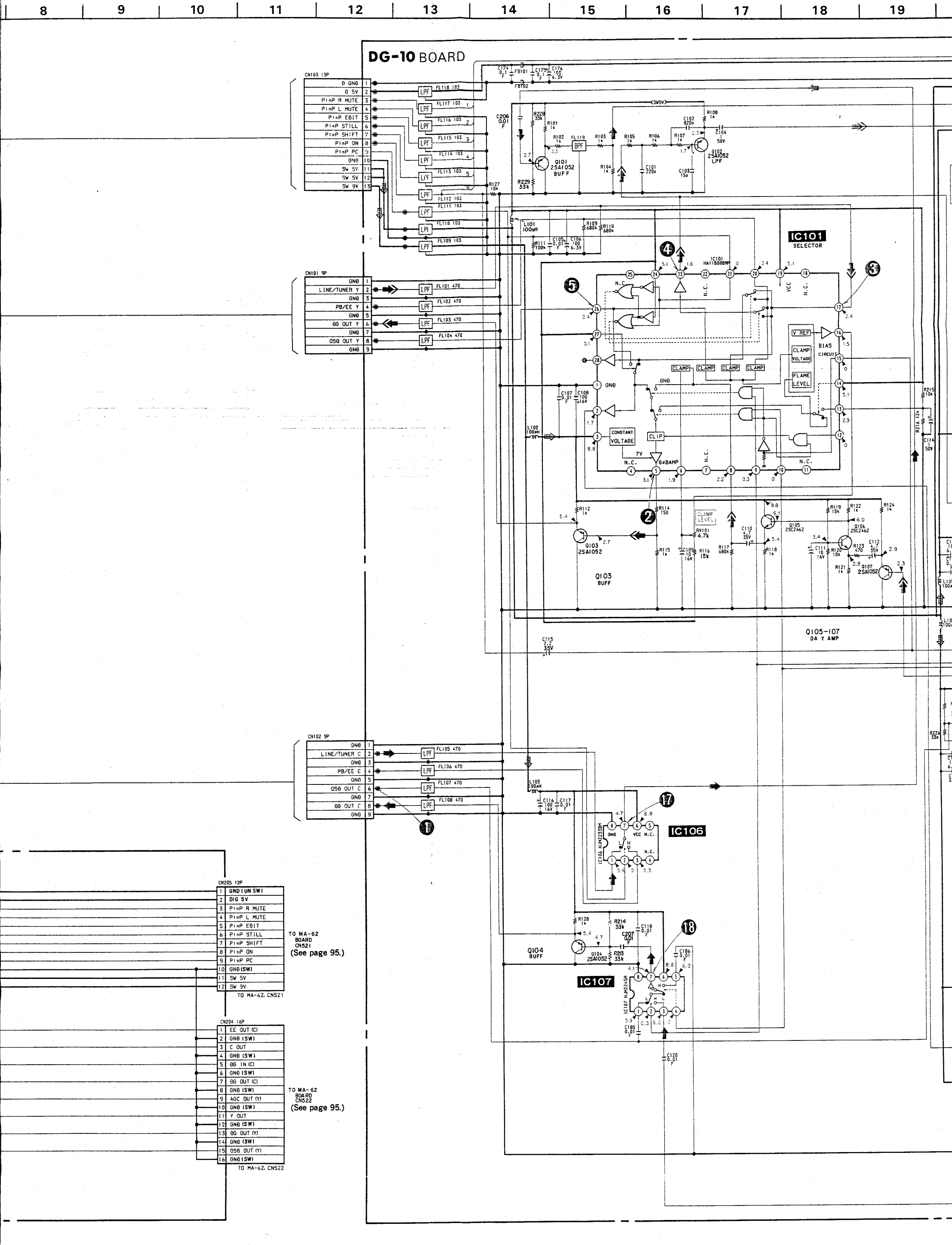
M
N
O
DI-42 BOARD
CN203 13P
D GND 1
D 5V 2
PinP R MUTE 3
PinP L MUTE 4
PinP EDIT 5
PinP STILL 6
PinP SHIFT 7
PinP ON 8
PinP PC 9
GND 10
SW 5V 11
SW 5V 12
SW 9V 13
TO DG-10 CN103
CN202 9P
GND 1
LINE/TUNER C 2
GND 3
PB/EE C 4
GND 5
OSD OUT C 6
GND 7
DG OUT C 8
GND 9
TO DG-10 CN102
CN201 9P
GND 1
LINE/TUNER Y 2
GND 3
PB/EE Y 4
GND 5
DG OUT Y 6
GND 7
OSD OUT Y 8
GND 9
TO DG-10 CN101

• **Signal path**

	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
REC	➡	➡»	➡⋙
PB	⇨	⇨»	⇨⋙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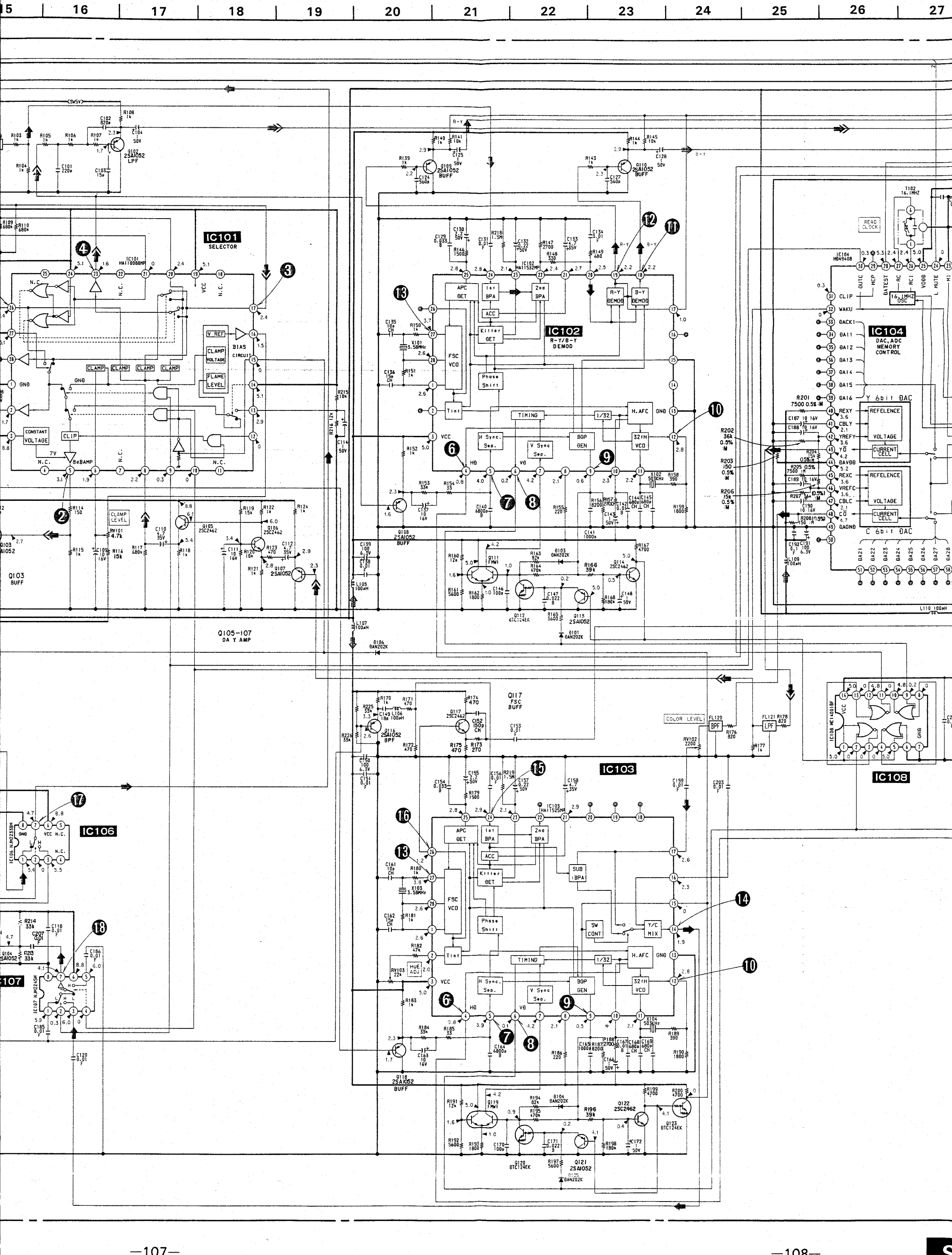
19
DG-10 BOARD
CN103 13P
1 B GND
2 B 5V
3 PinP R MUTE
4 PinP L MUTE
5 PinP EDIT
6 PinP STILL
7 PinP SHIFT
8 PinP ON
9 PinP PC
10 GND
11 SW 5V
12 SW 5V
13 SW 9V
LPF
FL118 103
FL117 103
FL116 103
FL115 103
FL114 103
FL113 103
FL112 103
FL111 103
FL110 103
FL109 103
C174 0.1 F
FB101
C175 0.1 F
C176 100 6.3V
FB102
C206 0.01 F
R228 33k
R101 1k
R102 1k
FL119
BPF
R103 1k
R105 1k
R106 1k
R107 1k
C102 820p
R108 1k
C104 1 50V
Q101 2SA1052 BUFF
Q102 2SA1052 LPF
R104 1k
C101 220p
C103 15p
R127 10k
R229 33k
(SW5V)
L101 100uH
R109 680k
R110 680k
R111 100k
C105 0.01 F
C106 100 6.3V
IC101 SELECTOR
IC101 HA118088MP
N.C.
VCC
V REF
BIAS CIRCUIT
CLAMP VOLTAGE
FLAME LEVEL
CLAMP
GND
CONSTANT VOLTAGE
CLIP
7V
8dBAMP
C107 0.01 F
C108 100 16V
L102 100uH
CN101 9P
1 GND
2 LINE/TUNER Y
3 GND
4 PB/EE Y
5 GND
6 BG OUT Y
7 GND
8 OSB OUT Y
9 GND
FL101 470
FL102 470
FL103 470
FL104 470
R112 1k
R114 150
CLAMP LEVEL
RV101 4.7k
C110 4.7 35V
Q103 2SA1052
Q103 BUFF
R115 1k
C109 10 16V
R116 15k
R117 680k
R118 1k
Q105 2SC2462
R119 15k
R122 1k
Q106 2SC2462
R124 1k
C111 10 16V
R120 10k
R123 470
C112 4.7 35V
R121 1k
Q107 2SA1052
Q105-107 DA Y AMP
R215 10k
R216 12k
C114 1 50V
C115 2.2 35V
R226 33k
CN102 9P
1 GND
2 LINE/TUNER C
3 GND
4 PB/EE C
5 GND
6 OSB OUT C
7 GND
8 BG OUT C
9 GND
FL105 470
FL106 470
FL107 470
FL108 470
L103 100uH
C116 100 16V
C117 0.01 F
IC106
IC106 NJM2233BH
GND
VCC
N.C.
R128 1k
R214 33k
C207 0.01 F
C118 0.01 F
Q104 BUFF
Q104 2SA1052
R213 33k
IC107
IC107 NJM2245M
C186 0.01 F
C185 0.01 F
C120 0.01 F
CN205 12P
1 GND (UN SW)
2 DIG 5V
3 PinP R MUTE
4 PinP L MUTE
5 PinP EDIT
6 PinP STILL
7 PinP SHIFT
8 PinP ON
9 PinP PC
10 GND (SW)
11 SW 5V
12 SW 9V
TO MA-62 CN521
TO MA-62 BOARD CN521
(See page 95.)
CN204 16P
1 EE OUT (C)
2 GND (SW)
3 C OUT
4 GND (SW)
5 BG IN (C)
6 GND (SW)
7 BG OUT (C)
8 GND (SW)
9 AGC OUT (Y)
10 GND (SW)
11 Y OUT
12 GND (SW)
13 BG OUT (Y)
14 GND (SW)
15 OSB OUT (Y)
16 GND (SW)
TO MA-62 CN522
TO MA-62 BOARD CN522
(See page 95.)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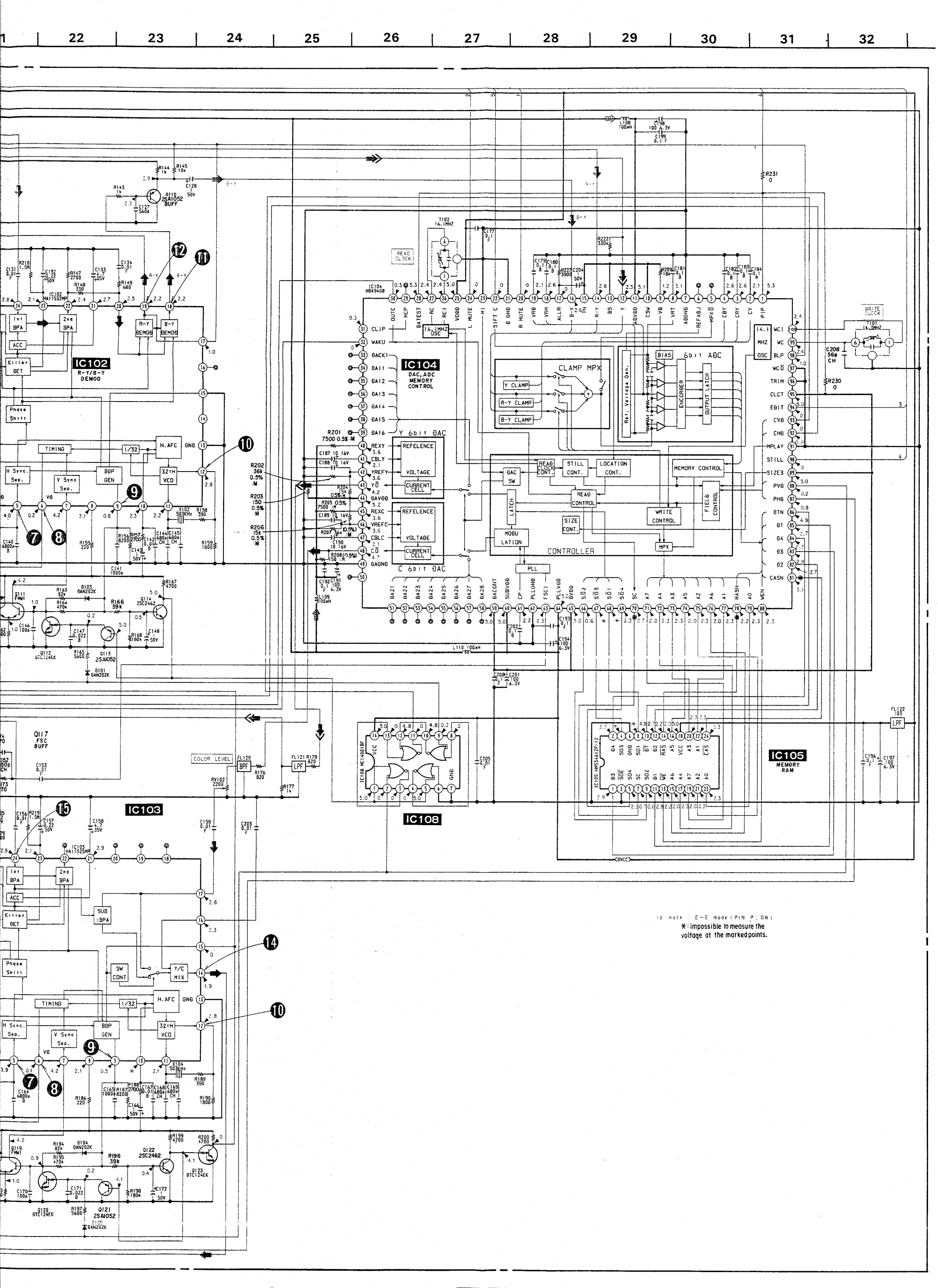
IC101
SELECTOR
HA118088NP
CONSTANT VOLTAGE
CLIP
8dBAMP
CLAMP
CLAMP LEVEL
V REF
CLAMP VOLTAGE
FLAME LEVEL
BIAS CIRCUIT
Q102 2SA1052 LPF
Q103 BUFF
Q105-107 DA Y AMP
Q105 2SC2462
Q106 2SC2462
Q107 2SA1052
IC102
R-Y/B-Y DEMOD
HA11532NP
IC103
HA11525NH
APC DET
1st BPA
2nd BPA
ACC
Killer DET
FSC VCO
Phase Shift
Tint
TIMING
H Sync. Sep.
V Sync Sep.
BGP GEN
1/32
H.AFC
32fH VCO
R-Y DEMOD
B-Y DEMOD
SUB BPA
SW CONT
Y/C MIX
HUE ADJ
COLOR LEVEL
BPF
LPF
Q108 2SA1052 BUFF
Q109 2SA1052 BUFF
Q110 2SA1052 BUFF
Q116 2SA1052 BPF
Q117 FSC BUFF
Q118 2SA1052 BUFF
IC104
DAC, ADC MEMORY CONTROL
HD49408
Y 6bit DAC
C 6bit DAC
REFELENCE
VOLTAGE
CURRENT CELL
16.1MHZ OSC
READ CLOCK
IC106
NJM2233BM
IC107
NJM2245M
IC108
MC14001BF



21
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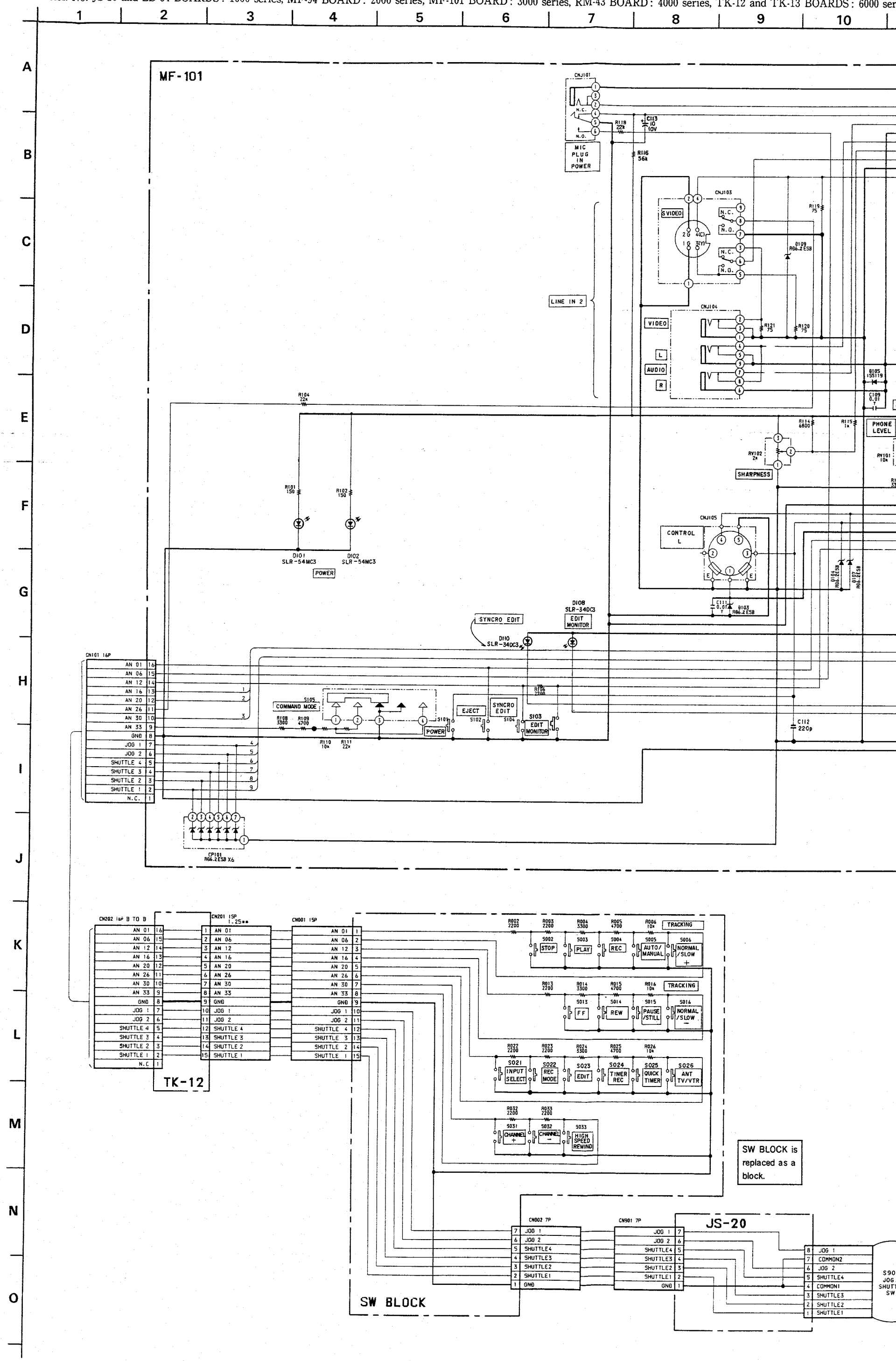
31
32
IC102
R-Y/B-Y DEMOD
IC103
IC104
DAC, ADC MEMORY CONTROL
IC105
MEMORY RAM
IC108
IC108 MC14001BF
IC105 HM534612P-12
IC104 HD49408
IC102 HA11532MP
IC103 HA11525MP
Y 6bit DAC
C 6bit DAC
6bit ADC
CLAMP MPX
Y CLAMP
R-Y CLAMP
B-Y CLAMP
Ref. Voltage Gen.
ENCORDER
OUTPUT LATCH
BIAS
CONTROLLER
MEMORY CONTROL
FIELD CONTROL
WRITE CONTROL
READ CONTROL
READ CLOCK CONT.
STILL CONT.
LOCATION CONT.
SIZE CONT.
LATCH
MODU LATION
DAC SW
MPX
PLL
REFELENCE
VOLTAGE
CURRENT CELL
16.1MHZ OSC
14.1 MHZ OSC
READ CLOCK
WRITE CLOCK
T102 16.1MHZ
T101 14.3MHZ
1st BPA
2nd BPA
ACC
Killer DET
Phase Shift
TIMING
1/32
H.AFC
H Sync. Sep.
V Sync Sep.
BGP GEN
32fH VCO
SUB :BPA
SW CONT
Y/C MIX
COLOR LEVEL
BPF
LPF
FL120
FL121
FL122
RV102
Q110 2SA1052 BUFF
Q117 FSC BUFF
Q111 FMW1
Q112 DTC124EK
Q113 2SA1052
Q114 2SC2462
Q119 FMW1
Q120 DTC124EK
Q121 2SA1052
Q122 2SC2462
Q123 DTC124EK
DVCC
⑦
⑧
⑨
⑩
⑪
⑫
⑭
⑮

◎ mark : E-E mode (PIN P : ON)
✱: Impossible to measure the voltage at the marked points.

JS-20 (JOG/SHUTTLE), LD-34 (LCD DRIVE), MF-94 (MODE CONTROL), MF-101 (FUNCTION), RM-43 (REMOTE CONTROL RECIEVER, LED), TK-12 (RELAY), TK-1

—Ref. No. JS-20 and LD-34 BOARDS : 1000 series, MF-94 BOARD : 2000 series, MF-101 BOARD : 3000 series, RM-43 BOARD : 4000 series, TK-12 and TK-13 BOARDS : 6000 ser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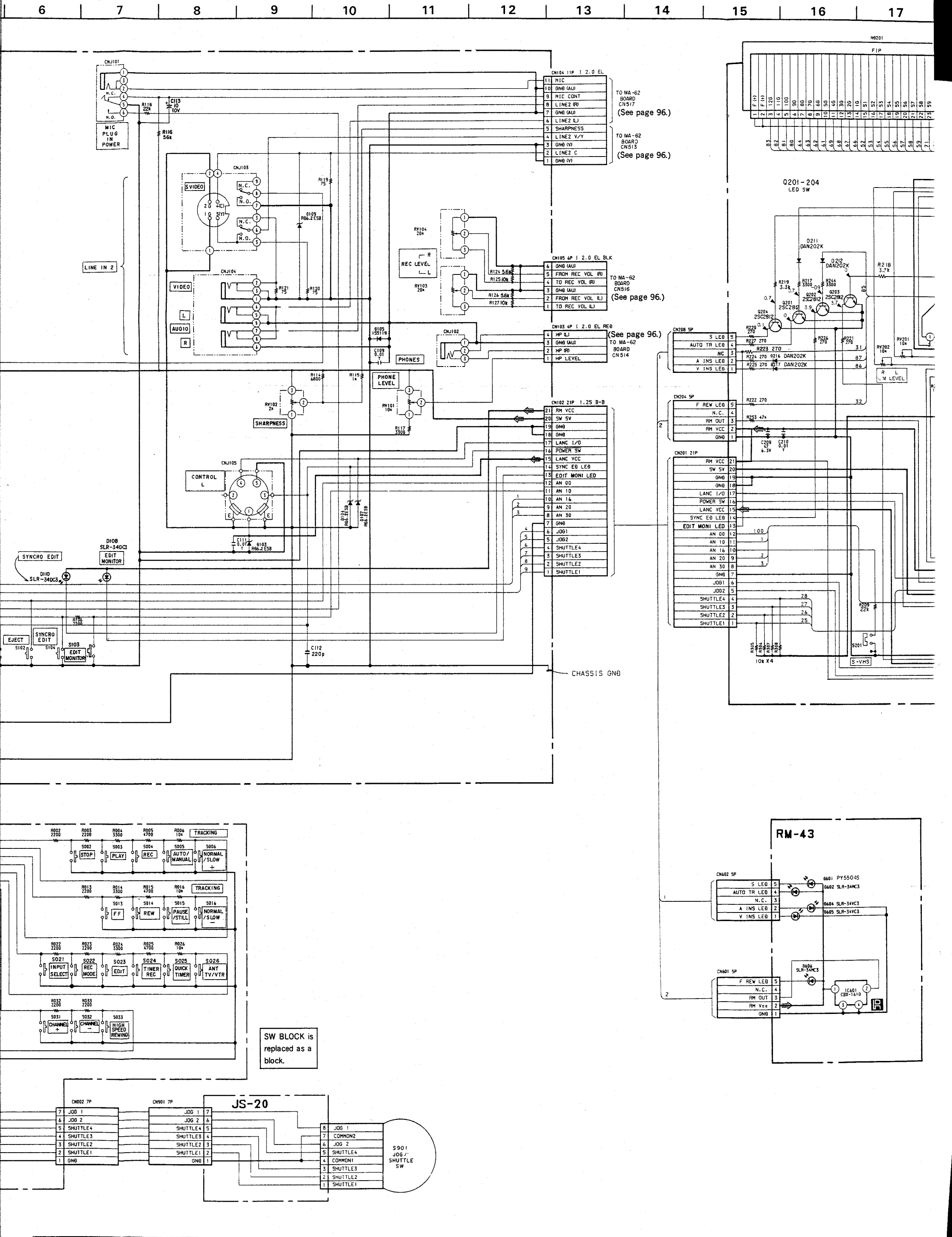
J
K
L
M
N
O
MF-101
CNJ101
MIC PLUG IN POWER
R118 22k
C113 10 10V
R116 56k
CNJ103
S VIDEO
LINE IN 2
CNJ104
VIDEO
L
AUDIO
R
R121 75
R120 75
R119 75
D109 RD6.2ESB
D105 1SS119
C109 0.01
PHONE LEVEL
R114 6800
R115 1k
RV102 2k
SHARPNESS
RV101 10k
CNJ105
CONTROL L
D104 RD6.2ESB
D107 RD6.2ESB
C111 0.01
D103 RD6.2ESB
R104 22k
R101 150
R102 150
D101 SLR-54MC3
D102 SLR-54MC3
POWER
D108 SLR-340C3
EDIT MONITOR
SYNCRO EDIT
D110 SLR-340C3
C112 220p
CN101 16P
AN 01
AN 06
AN 12
AN 16
AN 20
AN 26
AN 30
AN 33
GND
JOG 1
JOG 2
SHUTTLE 4
SHUTTLE 3
SHUTTLE 2
SHUTTLE 1
N.C.
S105
COMMAND MODE
R108 3300
R109 4700
R110 10k
R111 22k
S101
POWER
EJECT
S102
SYNCRO EDIT
S104
S103
EDIT MONITOR
R106 2200
CP101 RD6.2ESB X6
CN202 16P B TO B
CN201 15P 1.25mm
CN001 15P
TK-12
R002 2200
R003 2200
R004 3300
R005 4700
R006 10k
TRACKING
S002 STOP
S003 PLAY
S004 REC
S005 AUTO/MANUAL
S006 NORMAL/SLOW +
R013 2200
R014 3300
R015 4700
R016 10k
S013 FF
S014 REW
S015 PAUSE/STILL
S016 NORMAL/SLOW −
R022 2200
R023 2200
R024 3300
R025 4700
R026 10k
S021 INPUT SELECT
S022 REC MODE
S023 EDIT
S024 TIMER REC
S025 QUICK TIMER
S026 ANT TV/VTR
R032 2200
R033 2200
S031 CHANNEL +
S032 CHANNEL −
S033 HIGH SPEED REWIND
SW BLOCK is replaced as a block.
CN002 7P
CN901 7P
JS-20
SW BLOCK
JOG 1
COMMON2
JOG 2
SHUTTLE4
COMMON1
SHUTTLE3
SHUTTLE2
SHUTTLE1
S90
JOG
SHUTT
SW

FRONT FRONT

(FUNCTION), RM-43 (REMOTE CONTROL RECIEVER, LED), TK-12 (RELAY), TK-13 (RELAY) SW BLOCK SCHEMATIC DIAGRAM

BOARD: 3000 series, RM-43 BOARD: 4000 series, TK-12 and TK-13 BOARDS: 6000 series—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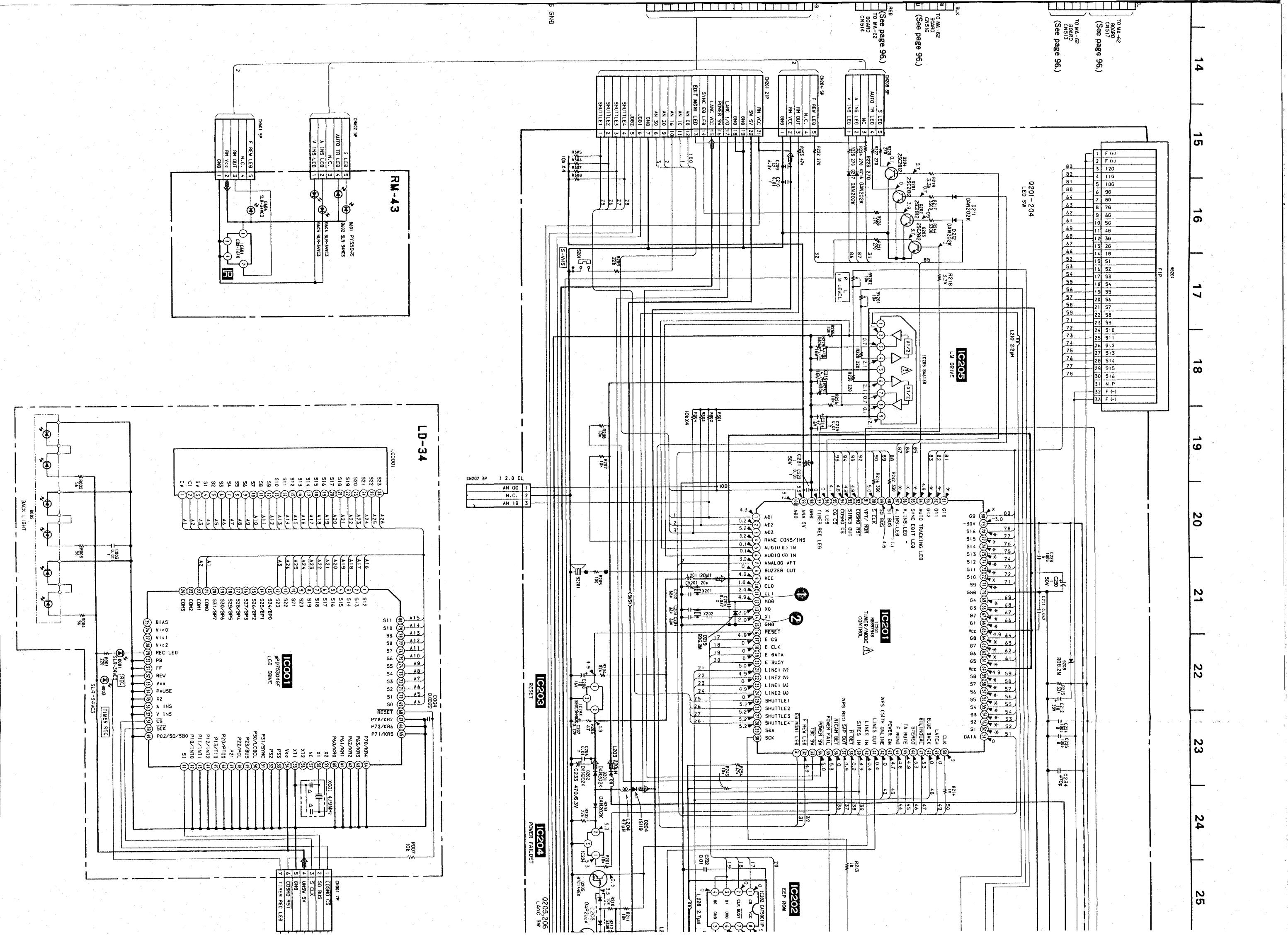
16
17
CNJ101
MIC PLUG IN POWER
N.C.
N.O.
R118 22k
C113 10 10V
R116 56k
LINE IN 2
CNJ103
S VIDEO
R119 75
D109 RD6.2ESB
CNJ104
VIDEO
L
AUDIO
R
R121 75
R120 75
D105 1SS119
C109 0.01
PHONES
PHONE LEVEL
R114 6800
R115 1k
RV102 2k
SHARPNESS
RV101 10k
R117 3300
CNJ105
CONTROL L
C111 0.01
D103 RD6.2ESB
D104 RD6.2ESB
D107 RD6.2ESB
RV104 20k
REC LEVEL R L
RV103 20k
R124 5.6k
R125 10k
R126 5.6k
R127 10k
CNJ102
CN104 11P 2.0 EL
MIC
GND (AU)
MIC CONT
LINE2 (R)
GND (AU)
LINE2 (L)
SHARPNESS
LINE2 V/Y
GND (V)
LINE2 C
GND (V)
TO MA-62 BOARD CN517
(See page 96.)
TO MA-62 BOARD CN513
(See page 96.)
CN105 6P 2.0 EL BLK
GND (AU)
FROM REC VOL (R)
TO REC VOL (R)
GND (AU)
FROM REC VOL (L)
TO REC VOL (L)
TO MA-62 BOARD CN516
(See page 96.)
CN103 4P 2.0 EL RED
HP (L)
GND (AU)
HP (R)
HP LEVEL
(See page 96.)
TO MA-62 BOARD CN514
CN102 21P 1.25 B-B
RM VCC
SW 5V
GND
GND
LANC I/O
POWER SW
LANC VCC
SYNC ED LED
EDIT MONI LED
AN 00
AN 10
AN 16
AN 20
AN 30
GND
JOG1
JOG2
SHUTTLE4
SHUTTLE3
SHUTTLE2
SHUTTLE1
SYNCRO EDIT
D110 SLR-34DC3
D108 SLR-34DC3
EDIT MONITOR
R106 2200
EJECT
S102
SYNCRO EDIT
S104
S103
EDIT MONITOR
C112 220p
CHASSIS GND
NE201
FIP
F (+)
F (+)
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
S1
S2
S3
S4
S5
S6
S7
S8
S9
Q201-204 LED SW
D211 DAN202K
D212 DAN202K
R218 3.3k
R219 3.3k
R217 3300
R244 3300
Q201 2SC2812
Q202 2SC2812
Q203 2SC2812
Q204 2SC2812
R220 270
R227 270
R223 270
R224 270
R225 270
D216 DAN202K
D217 DAN202K
R226 270
R221 270
RV202 10k
RV201 10k
R L LM LEVEL
CN208 5P
S LED
AUTO TR LED
NC
A INS LED
V INS LED
CN204 5P
F REW LED
N.C.
RM OUT
RM VCC
GND
R222 270
R253 47k
C209 47 6.3V
C210 0.01
CN201 21P
RM VCC
SW 5V
GND
GND
LANC I/O
POWER SW
LANC VCC
SYNC ED LED
EDIT MONI LED
AN 00
AN 10
AN 16
AN 20
AN 30
GND
JOG1
JOG2
SHUTTLE4
SHUTTLE3
SHUTTLE2
SHUTTLE1
R305
R306
R307
R308
10k X4
R209 22k
S201
S-VHS
R002 2200
R003 2200
R004 3300
R005 4700
R006 10k
TRACKING
S002 STOP
S003 PLAY
S004 REC
S005 AUTO/MANUAL
S006 NORMAL/SLOW +
R013 2200
R014 3300
R015 4700
R016 10k
TRACKING
S013 FF
S014 REW
S015 PAUSE/STILL
S016 NORMAL/SLOW −
R022 2200
R023 2200
R024 3300
R025 4700
R026 10k
S021 INPUT SELECT
S022 REC MODE
S023 EDIT
S024 TIMER REC
S025 QUICK TIMER
S026 ANT TV/VTR
R032 2200
R033 2200
S031 CHANNEL +
S032 CHANNEL −
S033 HIGH SPEED REWIND
SW BLOCK is replaced as a block.
RM-43
CN602 5P
S LED
AUTO TR LED
N.C.
A INS LED
V INS LED
D601 PY5504S
D602 SLR-34MC3
D604 SLR-34VC3
D605 SLR-34VC3
CN601 5P
F REW LED
N.C.
RM OUT
RM Vcc
GND
D606 SLR-34MC3
IC601 CBX-1610
JS-20
CN002 7P
JOG 1
JOG 2
SHUTTLE4
SHUTTLE3
SHUTTLE2
SHUTTLE1
GND
CN901 7P
S901 JOG/SHUTTLE SW
COMMON2
COMMON1

FRONT FRONT


RM-43
LD-34
IC001 μPD7530 4GF LCD DRIVE
IC201 TIMER/MODE CONTROL
IC202 EEP ROM
IC203 RESET
IC204 POWER FAILDET
IC205 LM DRIVE
Q201-204 LED SW
Q205,206 LANC SW
(See page 96.)
TO MA-62 BOARD CN514
TO MA-62 BOARD CN516
TO MA-62 BOARD CN515
TO MA-62 BOARD CN517
CN201 21P
CN204 5P
CN208 5P
CN401 5P
CN402 5P
CN001 7P
CN207 3P
M201 FIP
BACK LIGHT
14
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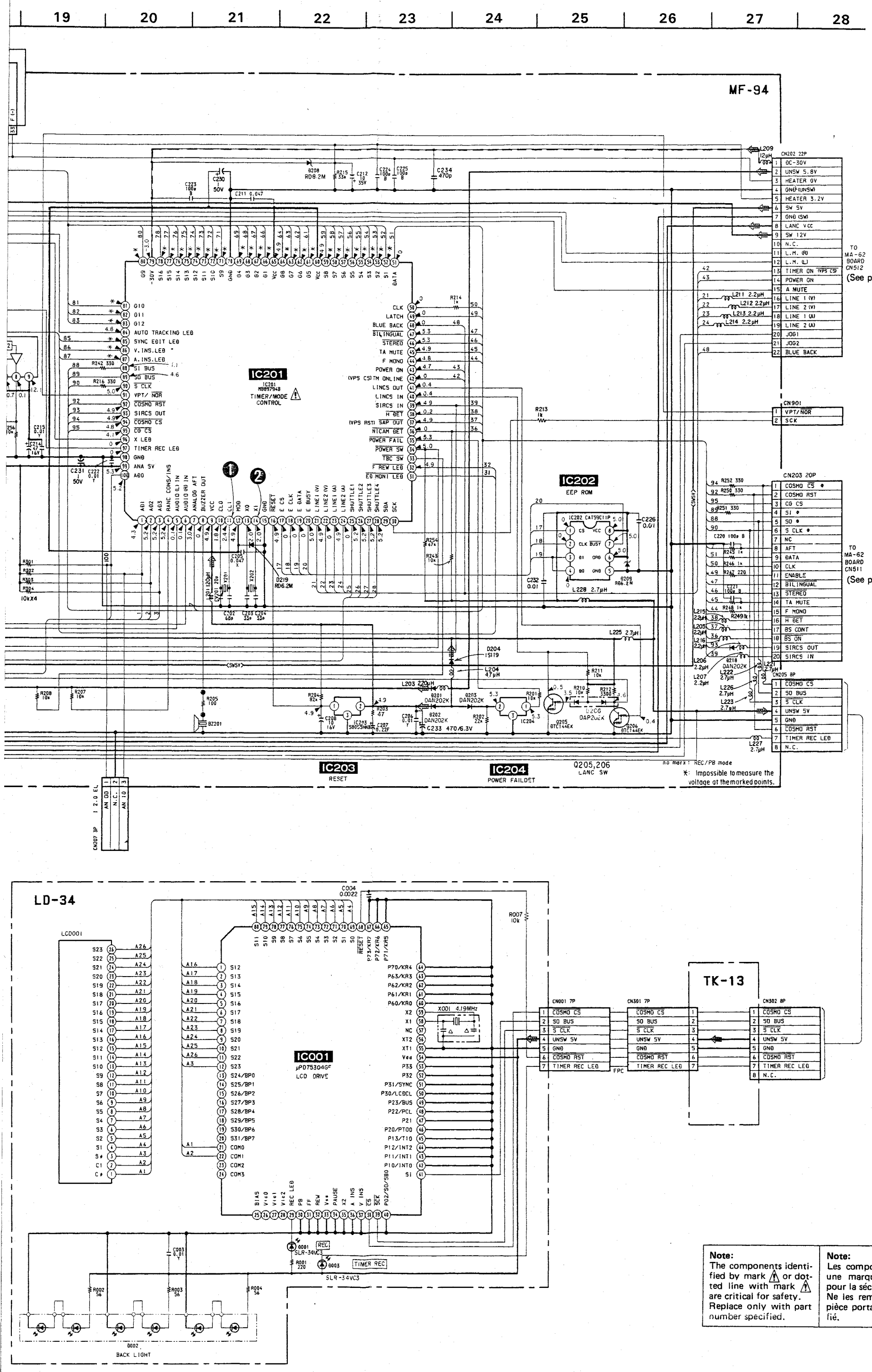
24
25

FRONT FRONT


19
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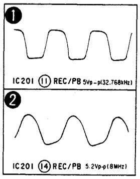
MF-94
IC201
IC201 M38979B4B
TIMER/MODE CONTROL
IC202
EEP ROM
IC202 CAT59C11P
IC203
RESET
IC204
POWER FAILDET
Q205,206
LANC SW
CN202 22P
DC-30V
UNSW 5.8V
HEATER 0V
GND(UNSW)
HEATER 3.2V
SW 5V
GND (SW)
LANC VCC
SW 12V
N.C.
L.M. (R)
L.M. (L)
TIMER ON (VPS CS)
POWER ON
A MUTE
LINE 1 (V)
LINE 2 (V)
LINE 1 (A)
LINE 2 (A)
JOG1
JOG2
BLUE BACK
TO MA-62 BOARD CN512
(See page 95.)
CN901
VPT/NOR
SCK
CN203 20P
COSMO CS
COSMO RST
CG CS
SI
SO
S CLK
NC
AFT
DATA
CLK
ENABLE
BILINGUAL
STEREO
TA MUTE
F MONO
H BET
BS CONT
BS ON
SIRCS OUT
SIRCS IN
TO MA-62 BOARD CN511
(See page 95.)
CN205 8P
COSMO CS
SO BUS
S CLK
UNSW 5V
GND
COSMO RST
TIMER REC LED
N.C.
no mark : REC/PB mode
✻ : Impossible to measure the voltage at the marked points.
CN207 3P
AN 00
N.C.
AN 10
LD-34
LCD001
IC001
μPD75304GF
LCD DRIVE
X001 4.19MHz
CN001 7P
CN301 7P
FPC
TK-13
CN302 8P
D001 SLR-34VC3
REC
D003
TIMER REC
SLR-34VC3
D002
BACK LIGHT

MF-94 BOARD

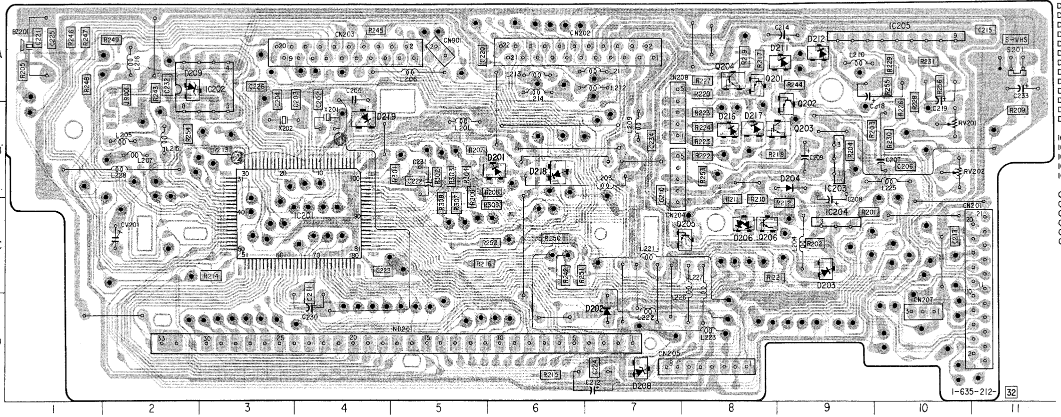

❶
IC201 ⑪ REC/PB 5Vp-p(32.768kHz)
❷
IC201 ⑭ REC/PB 5.2Vp-p(8MHz)

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

JS-20 (JOG/SHUTTLE), LD-34 (LCD DRIVE), MF-94 (MODE CONTROL), MF-101 (FUNCTION), RM-43 (REMOTE CONTROL RECIEVER, LED), TK-12 (RELAY), TK-13 (RELAY) PRINTED WIRING BOARDS

—Ref. No. JS-20 and LD-34 BOARDS : 1000 series, MF-94 BOARD : 2000 series, MF-101 BOARD : 3000 series, RM-43 BOARD : 4000 series, TK-12 and TK-13 BOARDS : 6000 series—

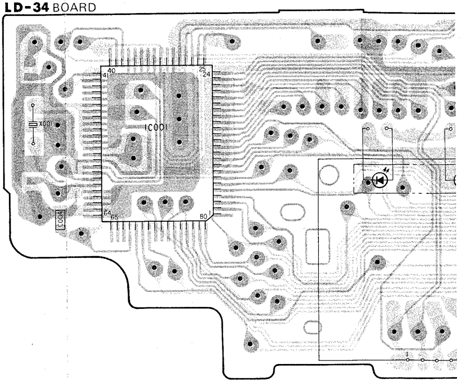
MF-94 BOARD



CN203
CN202
CN901
CN208
CN204
CN205
CN207
CN201
ND201
IC201
IC202
IC203
IC204
IC205
D201
D202
D203
D204
D206
D208
D209
D211
D212
D216
D217
D218
D219
Q201
Q202
Q203
Q204
Q205
Q206
X201
X202
BZ201
CV201
RV201
RV202
S201
S-VHS
1-635-212-
32
A
B
C
D
1
2
3
4
5
6
7
8
9
10
11

MF-94	
D201	B-5
D202	D-7
D203	C-9
D204	B-9
D206	C-8
D208	D-7
D209	A-2
D211	A-9
D212	A-9
D216	B-8
D217	B-8
D218	B-6
D219	B-4
IC201	C-4
IC202	A-3
IC203	B-9
IC204	C-9
IC205	A-10
Q201	A-8
Q202	A-9
Q203	B-8
Q204	A-8
Q205	C-8
Q206	C-8

LD-34 BOARD

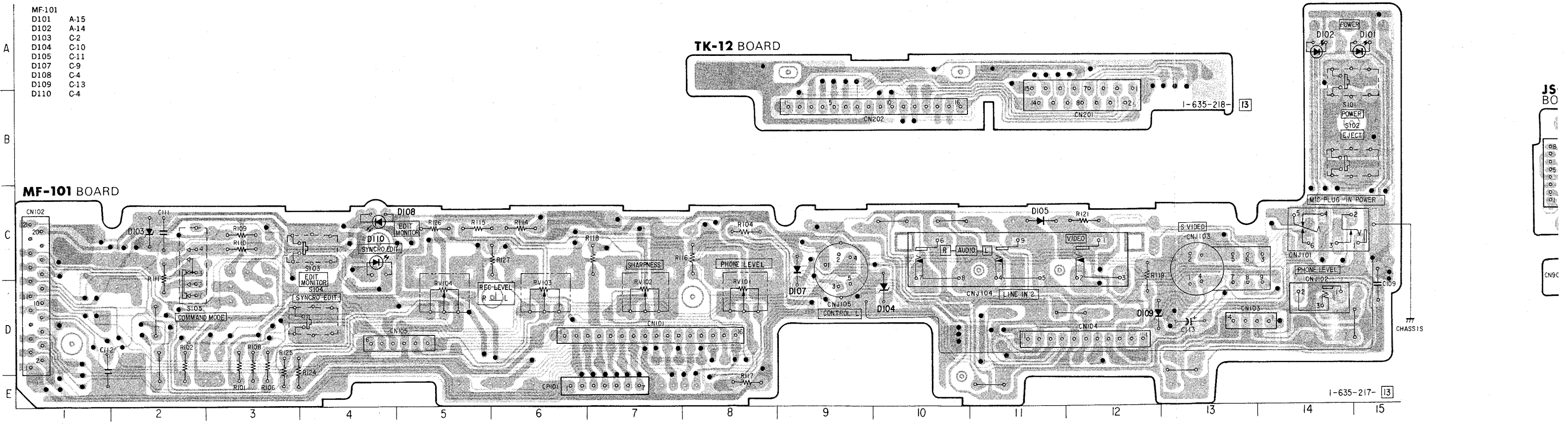


IC001
X001
C004
40
41
25
24
64
65
80
1

MF-101	
D101	A-15
D102	A-14
D103	C-2
D104	C-10
D105	C-11
D107	C-9
D108	C-4
D109	C-13
D110	C-4

TK-12 BOARD

MF-101 BOARD



CN202
CN201
1-635-218-
13
POWER
D102
D101
S101
POWER
S102
EJECT
MIC PLUG IN POWER
CN102
D103
C111
R109
R110
R111
S105
COMMAND MODE
S103
EDIT MONITOR
S104
SYNCRO EDIT
D108
D110
EDIT MONITOR
SYNCRO EDIT
R126
R115
R114
R118
R127
RV104
REC LEVEL
R L
RV103
SHARPNESS
RV102
R116
PHONE LEVEL
RV101
R104
CN105
CN101
CP101
R117
D107
CNJ105
CONTROL L
D104
D105
R121
AUDIO
R
L
CNJ104
LINE IN 2
VIDEO
R119
D109
C113
CN104
S VIDEO
CNJ103
CN103
CNJ101
PHONE LEVEL
CNJ102
C109
CHASSIS
C112
R102
R108
R101
R106
R125
R124
1-635-217-
13
JS
BO
CN9
A
B
C
D
E
1
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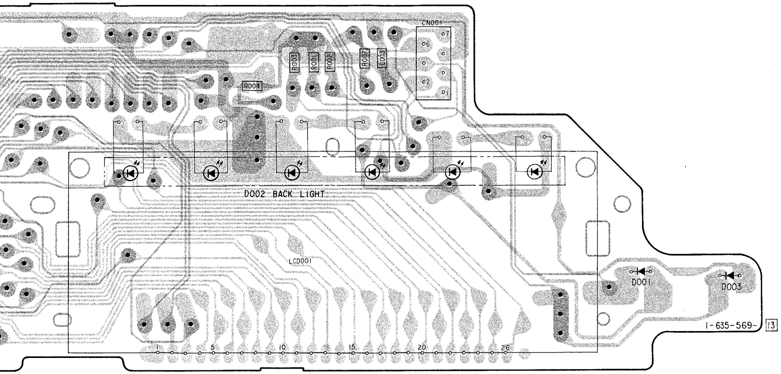
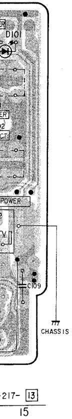
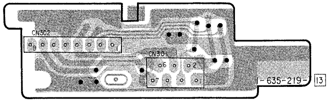
15

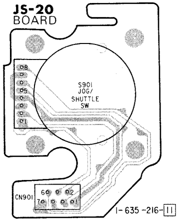

CN001
R003
R001
R002
R007
C003
R008
D002 BACK LIGHT
LCD001
D001
D003
1
5
10
15
20
26
1-635-569- 13


D101
POWER
C109
CHASSIS
-217- 13
15

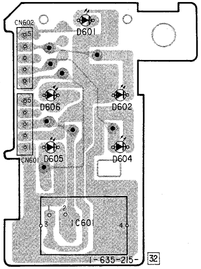
TK-13 BOARD


CN302
CN301
1-635-219- 13

JS-20 BOARD


S901
JOG/
SHUTTLE
SW
CN901
1-635-216- 11

RM-43 BOARD


CN602
D601
D606
D602
D605
D604
CN601
IC601
1-635-215- 32

MF-94 BOARD

DIODE

D201	8-719-400-18	DIODE MA152WK
D202	8-719-911-19	DIODE 1SS119
D203	8-719-400-18	DIODE MA152WK
D204	8-719-911-19	DIODE 1SS119
D206	8-719-104-34	DIODE 1S2836
D208	8-719-105-82	DIODE RD5.1M-B2
D209	8-719-106-08	DIODE RD6.2M-B2
D211	8-719-400-18	DIODE MA152WK
D212	8-719-400-18	DIODE MA152WK
D216	8-719-400-18	DIODE MA152WK
D217	8-719-400-18	DIODE MA152WK
D218	8-719-400-18	DIODE MA152WK
D219	8-719-106-08	DIODE RD6.2M-B2

IC

IC201	8-759-504-13	IC MB89794B-109
IC202	8-759-977-88	IC CAT59C11P
IC203	8-759-502-50	IC S-8053HNB
IC204	8-759-947-53	IC S-8054ALR
IC205	8-759-961-38	IC BA6138

TRANSISTOR

Q201	8-729-271-23	TRANSISTOR 2SC2712
Q202	8-729-271-23	TRANSISTOR 2SC2712
Q203	8-729-271-23	TRANSISTOR 2SC2712
Q204	8-729-271-23	TRANSISTOR 2SC2712
Q205	8-729-901-01	TRANSISTOR DTC144EK
Q206	8-729-901-01	TRANSISTOR DTC144EK

RM-43 BOARD

DIODE

D601	8-719-955-04	DIODE PY5504S-1
D602	8-719-940-82	DIODE SLR-34MC3
D604	8-719-940-99	DIODE SLR-34VC3
D605	8-719-940-99	DIODE SLR-34VC3
D606	8-719-940-82	DIODE SLR-34MC3

IC

IC601	1-466-131-21	CATCHER RAY BLOCK (GP1U52X)

MF-101 BOARD

DIODE

D101	8-719-955-04	DIODE PY5504S-1
D102	8-719-955-04	DIODE PY5504S-1
D103	8-719-109-93	DIODE RD6.2ES-B2
D104	8-719-109-93	DIODE RD6.2ES-B2
D105	8-719-911-19	DIODE 1SS119
D107	8-719-109-93	DIODE RD6.2ES-B2
D108	8-719-946-30	DIODE SLR-34DC3
D109	8-719-109-93	DIODE RD6.2ES-B2
D110	8-719-946-30	DIODE SLR-34DC3

LD-34 BOARD

DIODE

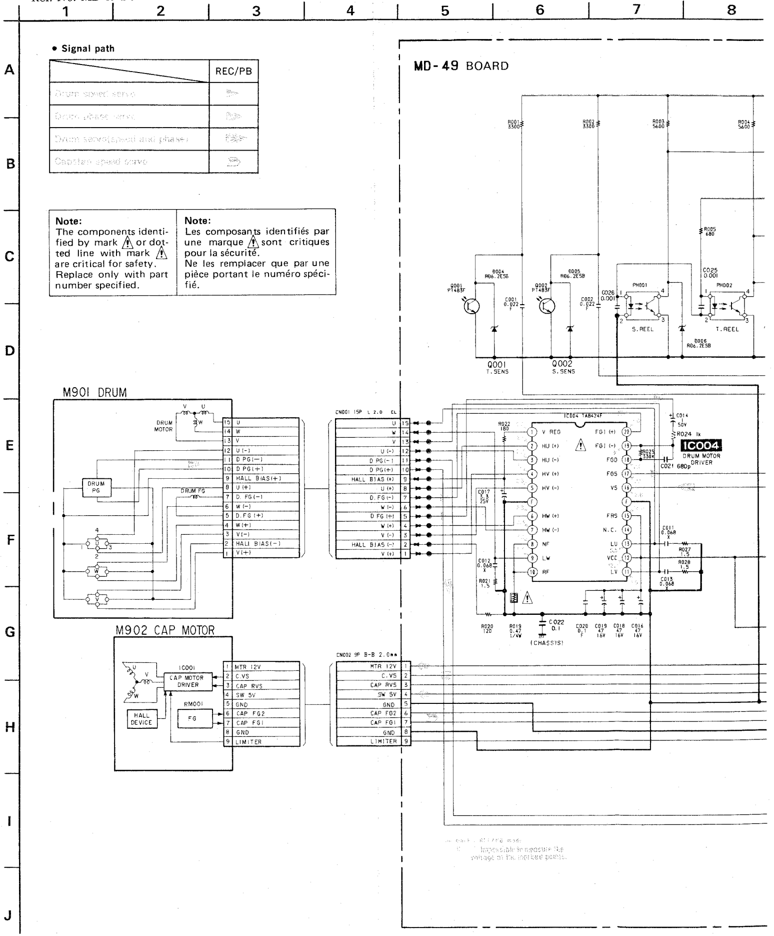
D001	8-719-940-99	DIODE SLR-34VC3
D003	8-719-940-99	DIODE SLR-34VC3

IC

IC001	8-759-149-72	IC UPD75304GF-108-3B9

MD-49 (MECHANISM DRIVE) SCHEMATIC DIAGRAM

—Ref. No. MD-49 BOARD : 7000 series—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A
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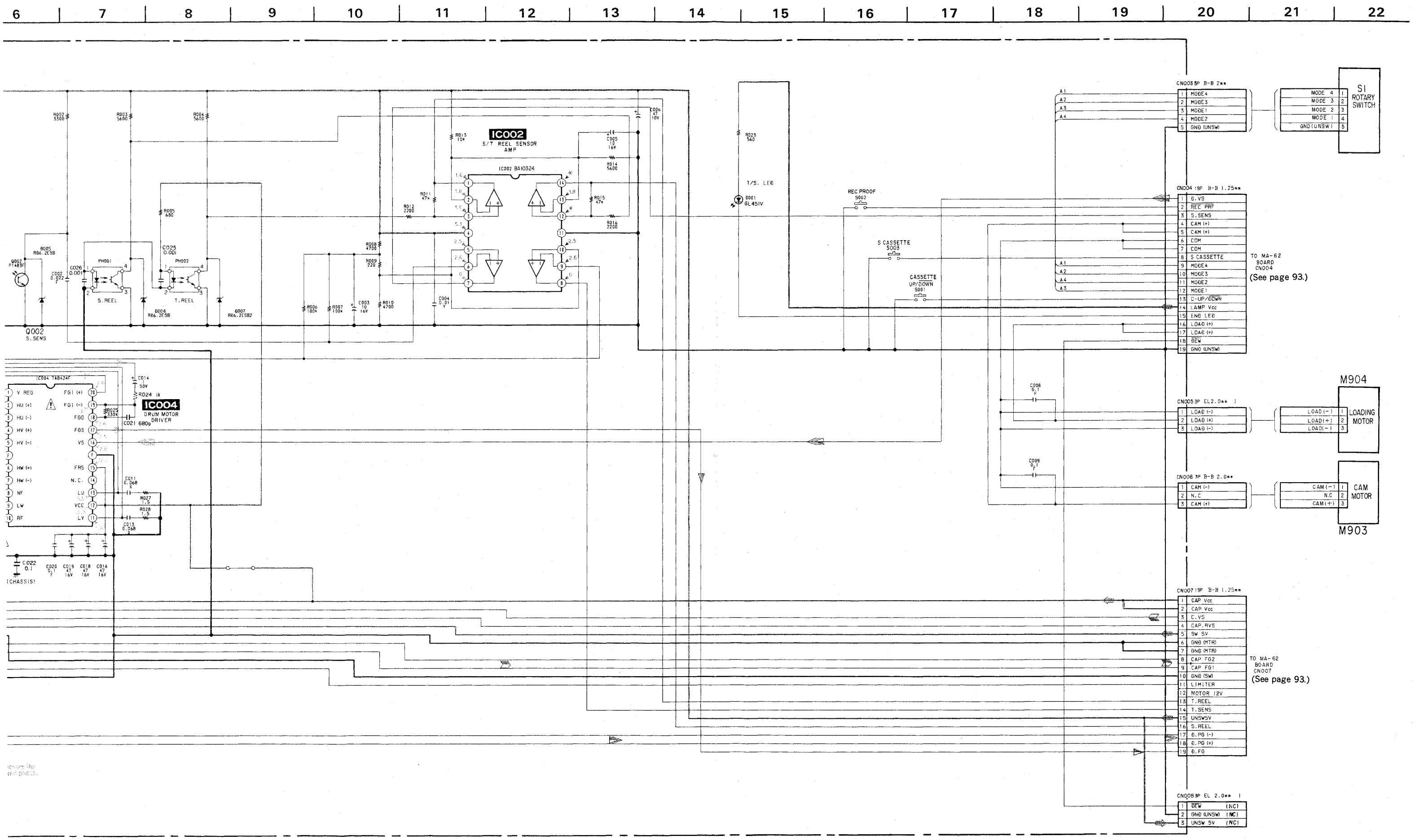
G
H
I
J
MD-49 BOARD
R001 3300
R002 3300
R003 5600
R004 5600
R005 680
D004 R06.2ESB
D005 R06.2ESB
D006 R06.2ESB
Q001 PT483F
Q002 PT483F
C001 0.022 F
C002 0.022 F
C026 0.001
C025 0.001
PH001
PH002
S.REEL
T.REEL
Q001 T.SENS
Q002 S.SENS
M901 DRUM
DRUM MOTOR
DRUM PG
DRUM FG
U
W
V
U(−)
D PG(−)
D PG(+)
HALL BIAS(+)
U(+)
D. FG(−)
W(−)
D.FG(+)
W(+)
V(−)
HALL BIAS(−)
V(+)
CN001 15P L 2.0 EL
IC004 TA8424F
V REG
HU(+)
HU(−)
HV(+)
HV(−)
HW(+)
HW(−)
NF
LW
RF
FG1(+)
FG1(−)
FGD
FGS
VS
FRS
N.C.
LU
VCC
LV
IC004
DRUM MOTOR DRIVER
R022 180
C014 1 50V
R024 1k
R025 330k
C021 680p
C017 3.3 25V
C012 0.068 X
R021 1.5
C011 0.068 X
R027 1.5
R028 1.5
C013 0.068 X
R020 120
R019 0.47 1/4W
C022 0.1
(CHASSIS)
C020 0.1 F
C019 47 16V
C018 47 16V
C016 47 16V
M902 CAP MOTOR
IC001
CAP MOTOR DRIVER
RM001
FG
HALL DEVICE
MTR 12V
C.VS
CAP RVS
SW 5V
GND
CAP FG2
CAP FG1
LIMITER
CN002 9P B-B 2.0mm

- **Signal path**

	REC/PB
Drum speed servo	▷
Drum phase servo	▷
Drum servo(speed and phase)	▷
Capstan speed servo	▷

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Impossible to measure the voltage at the marked points.


6
7
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13
14
15
16
17
18
19
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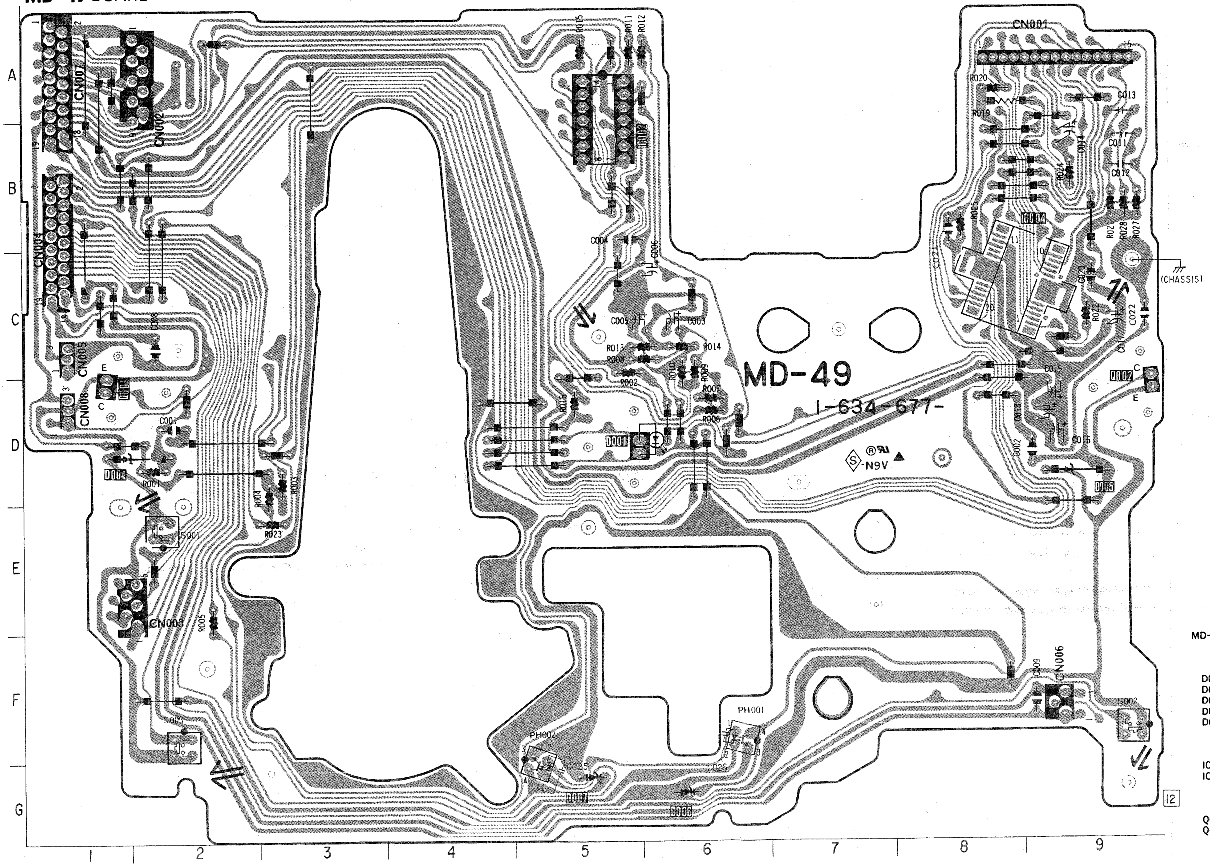
21
22
R002 3300
R003 5600
R004 5600
R005 680
C025 0.001
PH001
PH002
S.REEL
T.REEL
Q002 PT483F
D005 RD6.2ESB
C002 0.022 F
C026 0.001
D006 RD6.2ESB
D007 RD6.2ESB2
Q002
S.SENS
IC002
S/T REEL SENSOR AMP
IC002 BA10324
R013 10k
R011 47k
R012 2200
R008 4700
R009 220
R006 100k
R007 100k
C003 10 16V
R010 4700
C004 0.01 Y
C005 10 16V
C006 47 10V
R014 5600
R015 47k
R016 2200
1.6
1.8
1.8
5.1
2.5
2.6
0
1.8
2.5
2.6
0
R023 560
T/S. LED
D001 GL451V
REC PROOF S002
S CASSETTE S003
CASSETTE UP/DOWN S001
A1
A2
A3
A4
A1
A2
A4
A3
CN003 5P B-B 2mm
1 MODE4
2 MODE3
3 MODE1
4 MODE2
5 GND (UNSW)
MODE 4 1
MODE 3 2
MODE 2 3
MODE 1 4
GND(UNSW) 5
S1 ROTARY SWITCH
CN004 19P B-B 1.25mm
1 D.VS
2 REC PRF
3 S.SENS
4 CAM (+)
5 CAM (+)
6 COM
7 COM
8 S CASSETTE
9 MODE4
10 MODE3
11 MODE2
12 MODE1
13 C-UP/DOWN
14 LAMP Vcc
15 END LED
16 LOAD (+)
17 LOAD (+)
18 DEW
19 GND (UNSW)
TO MA-62 BOARD CN004
(See page 93.)
IC004 TA8424F
1 V REG
2 HU (+)
3 HU (-)
4 HV (+)
5 HV (-)
F
6 HW (+)
7 HW (-)
8 NF
9 LW
10 RF
20 FG1 (+)
19 FG1 (-)
18 FGO
17 FGS
16 VS
F
15 FRS
14 N.C.
13 LU
12 VCC
11 LV
C014 1 50V
R024 1k
R025 330k
C021 680p
IC004
DRUM MOTOR DRIVER
C011 0.068 X
R027 1.5
R028 1.5
C013 0.068 X
C022 0.1
(CHASSIS)
C020 0.1 F
C019 47 16V
C018 47 16V
C016 47 16V
C008 0.1 F
C009 0.1 F
M904
CN005 3P EL2.0mm I
1 LOAD (-)
2 LOAD (+)
3 LOAD (-)
LOAD(-) 1
LOAD(+) 2
LOAD(-) 3
LOADING MOTOR
CN006 3P B-B 2.0mm
1 CAM (-)
2 N.C
3 CAM (+)
CAM(-) 1
N.C 2
CAM(+) 3
CAM MOTOR
M903
CN007 19P B-B 1.25mm
1 CAP Vcc
2 CAP Vcc
3 C.VS
4 CAP.RVS
5 SW 5V
6 GND (MTR)
7 GND (MTR)
8 CAP FG2
9 CAP FG1
10 GND (SW)
11 LIMITER
12 MOTOR 12V
13 T.REEL
14 T.SENS
15 UNSW5V
16 S.REEL
17 D.PG (-)
18 D.PG (+)
19 D.FG
TO MA-62 BOARD CN007
(See page 93.)
CN008 3P EL 2.0mm I
1 DEW (NC)
2 GND (UNSW) (NC)
3 UNSW 5V (NC)

MD-49 (MECHANISM DRIVE) PRINTED WIRING BOARD

—Ref. No. MD-49 BOARD: 7000 series—

MD-49 BOARD



A
B
C
D
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G
1
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9
CN007
CN002
CN004
CN005
CN008
CN003
CN001
CN006
IC002
IC004
D001
D004
D005
D006
D007
Q001
Q002
C001
C003
C004
C005
C006
C008
C011
C012
C013
C014
C016
C017
C018
C019
C020
C021
C022
C025
C026
C009
C002
R001
R002
R003
R004
R005
R006
R007
R008
R009
R010
R011
R012
R013
R014
R015
R016
R019
R020
R021
R022
R023
R024
R025
R027
R028
S001
S002
S003
PH001
PH002
E
C
(CHASSIS)
MD-49
1-634-677-
N9V
12

MD-49	
D001	D-6
D004	D-1
D005	D-9
D006	G-6
D007	G-5
IC002	A-5
IC004	C-9
Q001	D-1
Q002	D-9

MD-49 BOARD

DIODE

D001	8-719-974-65	DIODE GL451V (LED)
D004	8-719-109-93	DIODE RD6.2ESB2
D005	8-719-109-93	DIODE RD6.2ESB2
D006	8-719-109-93	DIODE RD6.2ESB2
D007	8-719-109-93	DIODE RD6.2ESB2

IC

IC002	8-759-938-12	IC BA10324
IC004	.8-759-234-03	IC TA8424F

TRANSISTOR

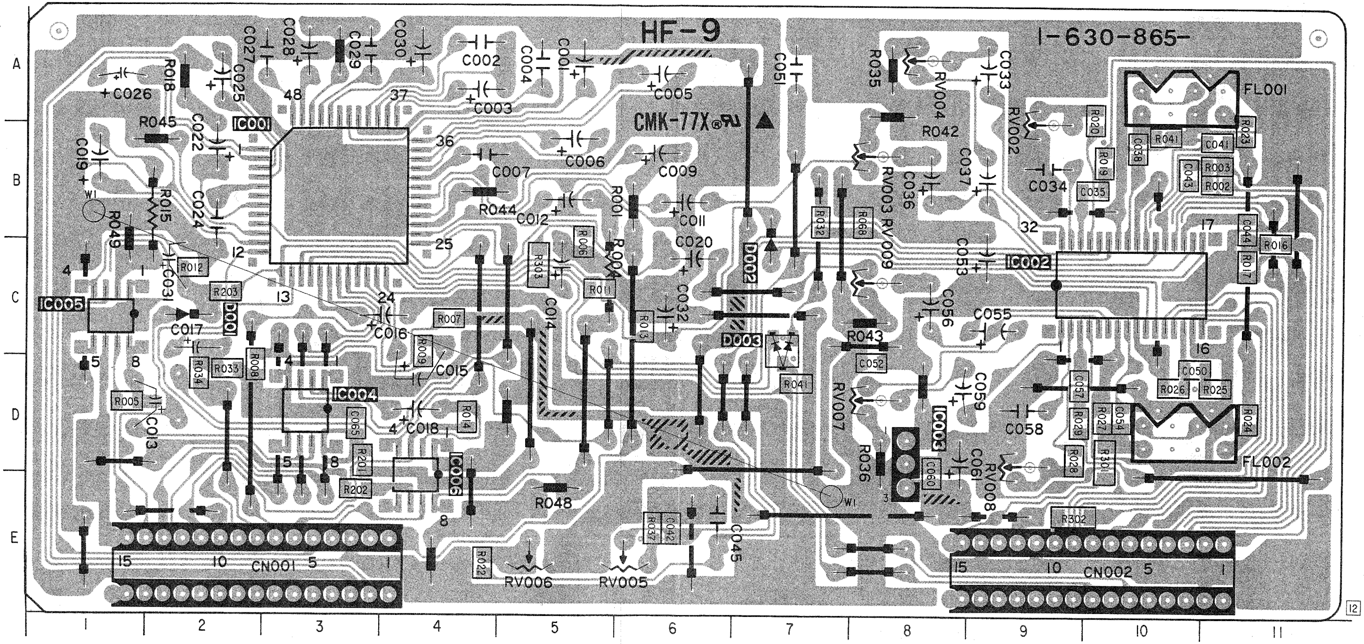
Q001	8-729-921-53	PHOTO TRANSISTOR PT483F1
Q002	8-729-921-53	PHOTO TRANSISTOR PT483F1

HF-9 (Hi-Fi AUDIO) PRINTED WIRING BOARD

—Ref. No. HF-9 BOARD : 9000 series—

HF-9	
D001	C-2
D002	C-7
D003	C-7
IC001	B-3
IC002	C-10
IC003	D-8
IC004	D-3
IC005	C-1
IC006	D-4

HF-9 BOARD


HF-9
1-630-865-
CMK-77X
IC001
IC002
IC003
IC004
IC005
IC006
D001
D002
D003
FL001
FL002
CN001
CN002
RV002
RV003
RV004
RV005
RV006
RV007
RV008
RV009
C001
C002
C003
C004
C005
C006
C007
C009
C011
C012
C013
C014
C015
C016
C017
C018
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C022
C024
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C056
C057
C058
C059
C060
C061
C065
R001
R002
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R027
R028
R029
R032
R033
R034
R035
R036
R037
R041
R042
R043
R044
R045
R048
R049
R068
R201
R202
R203
R301
R302
R303
W1
A
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C
D
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HF-9 BOARD

DIODE

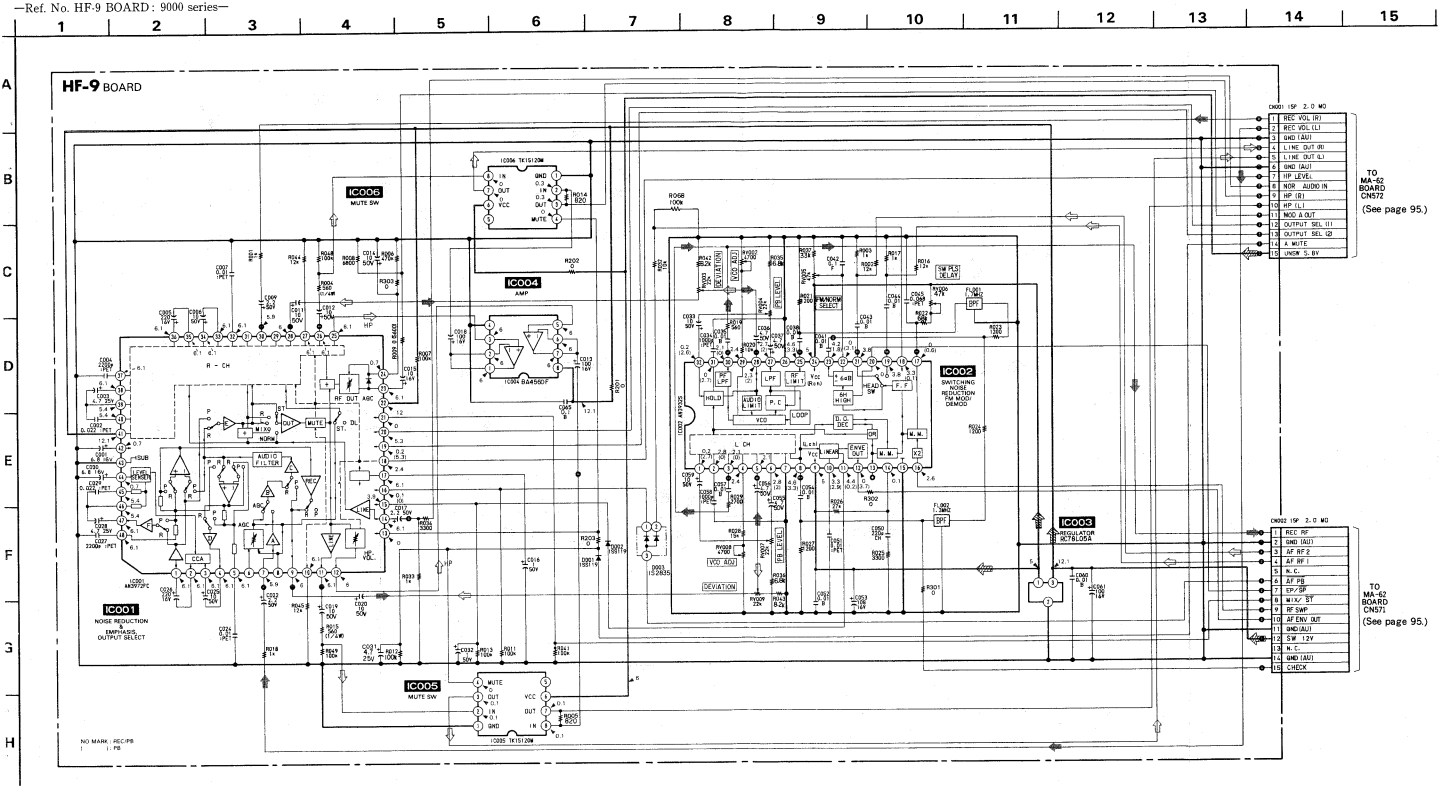
D001	8-719-911-19	DIODE 1SS119
D002	8-719-911-19	DIODE 1SS119
D003	8-719-104-34	DIODE 1S2836

IC

IC001	8-759-420-18	IC AN3972FC
IC002	8-759-420-87	IC AN3933SC
IC003	8-759-982-21	IC RC78L05A
IC004	8-759-924-46	IC BA4560F
IC005	8-759-946-44	IC TK15120M
IC006	8-759-946-44	IC TK15120M

HF-9 (Hi-Fi AUDIO) SCHEMATIC DIAGRAM

—Ref. No. HF-9 BOARD : 9000 series—


1
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11
12
13
14
15
A
B
C
D
E
F
G
H
HF-9 BOARD
IC001 AN3972FC
IC001 NOISE REDUCTION & EMPHASIS, OUTPUT SELECT
IC002 AN3932S
IC002 SWITCHING NOISE REDUCTION FM MOD/DEMOD
IC003 REGULATOR RC78L05A
IC004 AMP
IC004 BA4560F
IC005 MUTE SW
IC005 TK15120M
IC006 MUTE SW
IC006 TK15120M
R - CH
L CH
MIX
NORM
AUDIO FILTER
LEVEL SENSER
CCA
AGC
MUTE
LINE
HP VOL.
DEVIATION
VCO ADJ
PB LEVEL
FM/NORM SELECT
SW PLS DELAY
BPF
FL001 1.7MHz
FL002 1.3MHz
HOLD
AUDIO LIMIT
VCO
LOOP
P.C
LPF
RF LIMIT
6dB
6H HIGH
HEAD SW
F.F
D.C DEC
OR
M.M.
X2
LINEAR
ENVE DUT
D003 IS2835
D001 1SS119
D002 1SS119
CN001 15P 2.0 MO
1 REC VOL (R)
2 REC VOL (L)
3 GND (AU)
4 LINE OUT (R)
5 LINE OUT (L)
6 GND (AU)
7 HP LEVEL
8 NOR AUDIO IN
9 HP (R)
10 HP (L)
11 MOD A OUT
12 OUTPUT SEL (1)
13 OUTPUT SEL (2)
14 A MUTE
15 UNSW 5.8V
TO MA-62 BOARD CN572
(See page 95.)
CN002 15P 2.0 MO
1 REC RF
2 GND (AU)
3 AF RF 2
4 AF RF 1
5 N.C.
6 AF PB
7 EP/SP
8 MIX/ST
9 RF SWP
10 AF ENV OUT
11 GND (AU)
12 SW 12V
13 N.C.
14 GND (AU)
15 CHECK
TO MA-62 BOARD CN571
(See page 95.)
NO MARK : REC/PB
( ) : PB

• Signal path

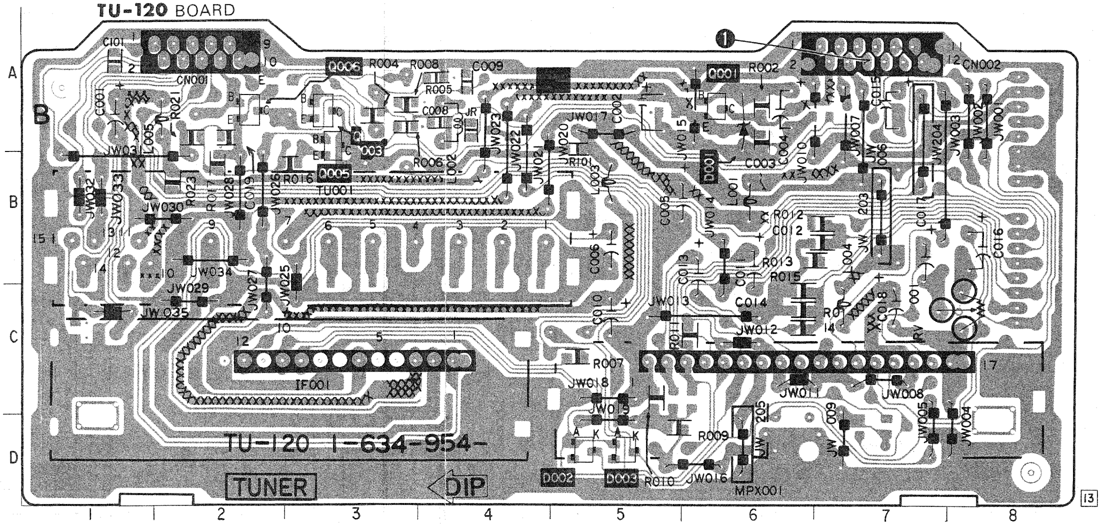
	AUDIO Signal
REC	➡
PB	⇨

TU-120 (TUNER) PRINTED WIRING BOARD

—Ref. No. TU-120 BOARD : 2000 series—

TU-120

D001	A-6
D002	D-5
D003	D-5
Q001	A-6
Q003	A-3
Q005	A-3
Q006	A-2


TU-120 BOARD
❶
CN001
CN002
C101
Q006
R004
R008
R005
C009
C008
Q001
R002
C015
C001
R021
L005
JW031
Q003
R006
L002
JW023
JW022
JW021
JW020
JR101
JW017
C002
JW015
D001
C003
C004
JW010
JW007
JW006
JW204
JW003
JW002
JW001
JW032
JW033
JW030
R023
R017
JW028
C019
JW026
R016
Q005
TU001
L003
C005
JW014
L001
R012
C012
JW203
C017
C016
JW034
JW029
JW027
JW025
JW035
C006
C013
C011
R013
R015
L004
C018
RV001
C010
JW013
C014
R011
JW012
R014
IF001
R007
JW018
JW019
JW011
JW008
JW005
JW004
JW009
R009
JW205
JW016
R010
D002
D003
MPX001
TU-120 1-634-954-
TUNER
DIP
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B
C
D
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8
13

TU-120 BOARD

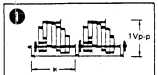
DIODE

D001	8-719-110-78	DIODE RD33ES-B2
D002	8-719-400-18	DIODE MA152WK
D003	8-719-400-18	DIODE MA152WK

TRANSISTOR

Q001	8-729-901-78	TRANSISTOR 2SC2412K-R
Q003	8-729-901-78	TRANSISTOR 2SC2412K-R
Q005	8-729-901-78	TRANSISTOR 2SC2412K-R
Q006	8-729-900-53	TRANSISTOR DTC114EK

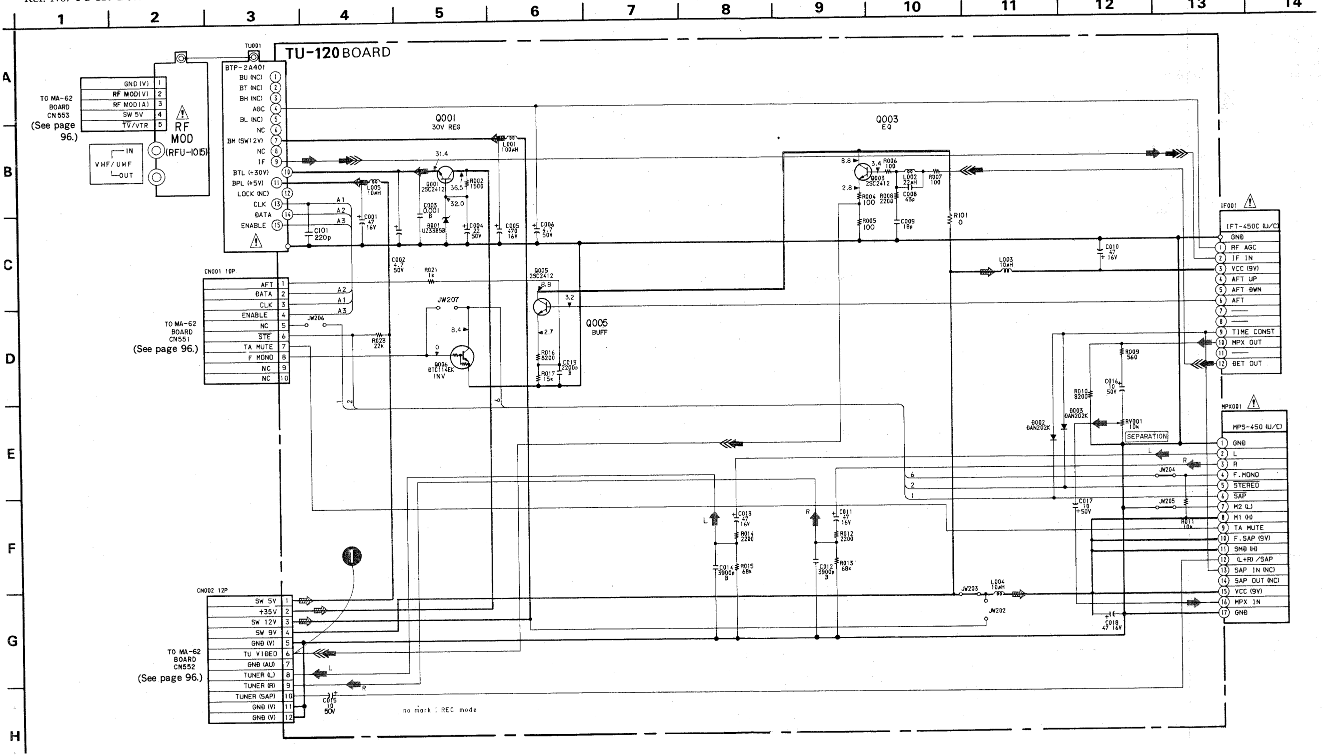
TU-120 BOARD



CN002 ⑥ REC

TU-120 (TUNER) SCHEMATIC DIAGRAM

—Ref. No. TU-120 BOARD: 2000 series—


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
TU-120 BOARD
TU001
BTP-2A401
BU (NC)
BT (NC)
BH (NC)
AGC
BL (NC)
NC
BH (SW12V)
NC
IF
BTL (+30V)
BPL (+5V)
LOCK (NC)
CLK
DATA
ENABLE
TO MA-62 BOARD CN553 (See page 96.)
GND (V)
RF MOD (V)
RF MOD (A)
SW 5V
TV/VTR
RF MOD (RFU-1015)
VHF/UHF
IN
OUT
C101 220p
CN001 10P
AFT
DATA
CLK
ENABLE
NC
STE
TA MUTE
F MONO
NC
NC
TO MA-62 BOARD CN551 (See page 96.)
Q001 30V REG
Q001 2SC2412
31.4
36.5
32.0
R002 1500
L001 100µH
L005 10µH
C001 47 16V
C002 4.7 50V
C003 0.001 B
D001 UZ33BSB
C004 22 50V
C005 470 16V
C006 4.7 50V
R021 1k
JW207
JW206
R023 22k
8.4
0
Q006 DTC114EK INV
Q005 2SC2412
Q005 BUFF
8.8
3.2
2.7
R016 8200
R017 15k
C019 2200p B
Q003 EQ
Q003 2SC2412
8.8
3.4
2.8
R006 100
L002 22µH
R007 100
R004 100
R008 2200
C008 45p
R005 100
C009 18p
R101 0
L003 10µH
C010 47 16V
IF001
IFT-450C (U/C)
GND
RF AGC
IF IN
VCC (9V)
AFT UP
AFT DWN
AFT
TIME CONST
MPX OUT
DET OUT
R009 560
C016 10 50V
R010 8200
D002 DAN202K
D003 DAN202K
RV001 10k
SEPARATION
MPX001
MPS-450 (U/C)
GND
L
R
F.MONO
STEREO
SAP
M2 (L)
M1 (R)
TA MUTE
F.SAP (9V)
SMD (H)
(L+R)/SAP
SAP IN (NC)
SAP OUT (NC)
VCC (9V)
MPX IN
GND
JW204
JW205
R011 10k
C017 10 50V
C018 47 16V
C013 47 16V
R014 2200
C014 3900p B
R015 68k
C011 47 16V
R012 2200
C012 3900p B
R013 68k
JW203
L004 10µH
JW202
CN002 12P
SW 5V
+35V
SW 12V
SW 9V
GND (V)
TU VIDEO
GND (AU)
TUNER (L)
TUNER (R)
TUNER (SAP)
GND (V)
GND (V)
TO MA-62 BOARD CN552 (See page 96.)
C015 10 50V
❶
no mark : REC mode

• Signal path

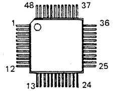
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	⇛	⇶	➡

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

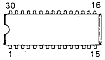
5-3. SEMICONDUCTORS

AN3237FB
AN3972FC


48
37
1
36
12
25
13
24

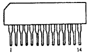
(TOP VIEW)

AN3495K
HA118019NT
HA118027NT

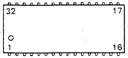


(TOP VIEW)

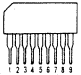
AN3916



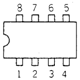
AN3933SC



AN6392L
BA6138
LA7954
LVA519S
LVA522S

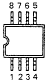


BA4560
CAT59C11P
CXL5504P
LM324N
LM358N
MN3109
MN3814
M5201P
RC4556D



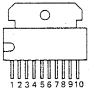
(TOP VIEW)

BA4560F
NJM2233BM
NJM2234M
TK15120M



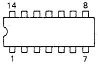
(TOP VIEW)

BA6238A


1 2 3 4 5 6 7 8 9 10

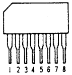
marking side view

BA10324
CXL5005P
MC14066BCP
MC14070BCP

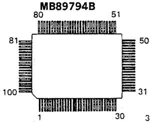


(TOP VIEW)

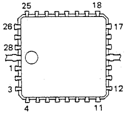
CXA1413L
LA7016



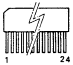
CXP80624
HD49408
MB89794B


80
51
81
50
100
31
1
30

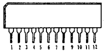
HA11525MP
HA11532MP
HA118088MP
HA12115MP


25
18
26
17
28
1
3
12
4
11

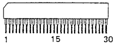
HM53461ZP-12



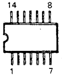
LA7222


1 2 3 4 5 6 7 8 9 10 11 12

LA7297

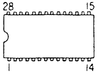


MC14001BF
MC14070BF



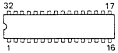
(TOP VIEW)

MC68HC05P7



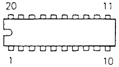
(TOP VIEW)

M50554SP



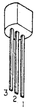
(TOP VIEW)

M52435P

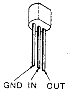


(Top view)

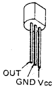
RC78L05A



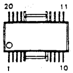
S-8053HNB



S-8054ALR

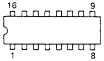


TA8424F



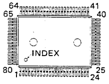
(TOP VIEW)

TC4052BPHB



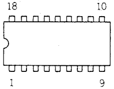
(TOP VIEW)

μPD75304GF


64
41
65
40
INDEX
80
1
24
25

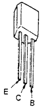
marking side view

VC2031DP
VC2076

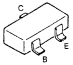


(TOP VIEW)

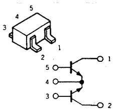
DTA114ES
DTA144ES
DTC114ES
DTC144ES
2SC1740S



DTA124EK
DTA144EK
DTC114EK
DTC124EK
DTC144EK
2SA1037K
2SA1052C
2SA1162
2SA1226
2SC1623
2SC2223
2SC2412K
2SC2712



FMW1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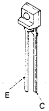
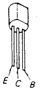
3
1
2

PT483F1

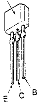


2SA933S

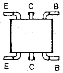


2SA1175
2SA1309A
2SC2785
2SC3311A
2SD1020
2SD1021

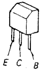
letter side



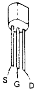
2SA1237
2SC3064



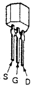
2SD774



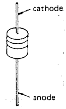
2SK105A



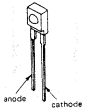
2SK381-B



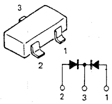
ERA82-004
RD33ES-B2
RD6.2ES-B2
RD6.8ES-L3
1SS119
11ES2


cathode
anode

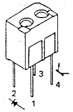
GL451V


anode
cathode

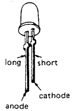
MA152WK
1S2837



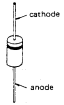
PS6002



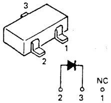
PY5504S-1


long
short
cathode
anode

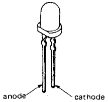
RD4.7E-L2
RD5.1E-L2


cathode
anode

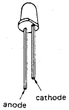
RD5.1M-B2
RD6.2M-B2
RD6.8M-B2
RD8.2M-B2



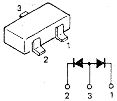
SLR-34DC3


anode
cathode

SLR-34MC3
SLR-34VC3


anode
cathode

1S2836



SECTION 6
EXPLODED VIEWS

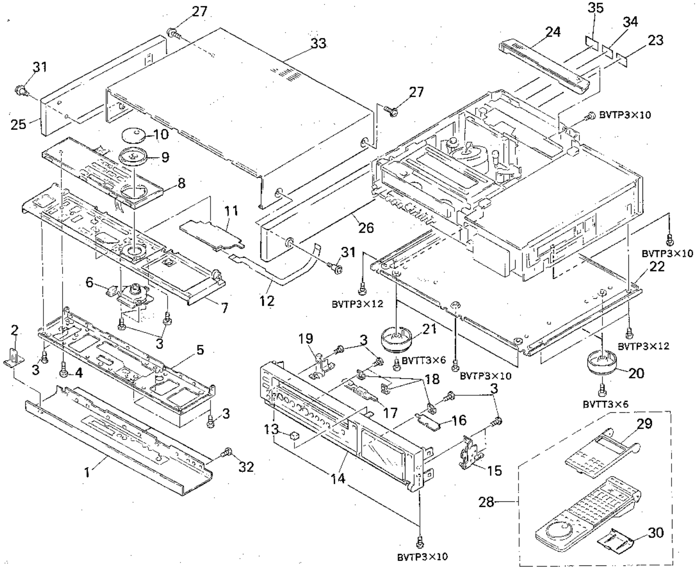
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

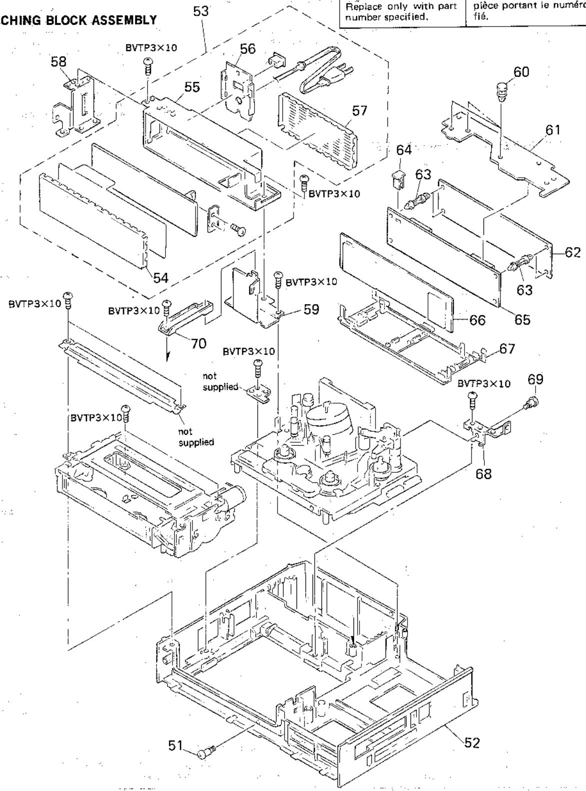
6-1. FRONT PANEL AND CABINET ASSEMBLIES



Ref.No	Part No.	Description	Remark
1	X-3940-046-1	DOOR, FRONT ASSY	
2	3-743-650-01	COVER, POWER LAMP	
3	4-921-277-11	SCREW (B2.6X8), TAPPING, BIND	
4	4-921-277-21	SCREW (B2.6X12), TAPPING, BIND	
5	*3-744-049-01	REINFORCEMENT, DOOR	
6	*1-635-216-11	JS-20 BOARD	
7	X-3743-557-1	PLATE ASSY, ORNAMENTAL, DOOR	
8	1-466-346-11	SWITCH BLOCK, CONTROL	
9	3-744-019-11	RING, SHUTTLE	
10	3-744-018-01	DIAL, JOG	
11	*1-635-569-13	LD-34 BOARD	
12	*1-635-572-11	FP-345 BOARD	
13	9-911-841-XX	CUSHION (B)	
14	X-3743-561-1	PANEL ASSY, FRONT	
15	A-6759-493-A	PLATE (R) BLOCK ASSY, FULCRUM	
16	*1-635-219-11	TK-13 BOARD	
17	*1-635-218-11	TK-12 BOARD	
18	*3-743-640-01	RETAINER, PC BOARD	
19	X-3940-045-1	PLATE (L) ASSY, FULCRUM	
20	X-3749-159-1	FOOT ASSY	
21	X-3749-160-1	FOOT ASSY	
22	3-743-671-01	PLATE, BOTTOM	
23	*3-744-092-01	LABEL, MODEL NUMBER (NO.4)	
24	3-743-644-01	COVER, POWER	
25	X-3743-563-1	WOOD (L) ASSY, SIDE	
26	X-3743-564-1	WOOD (R) ASSY, SIDE	
27	3-710-901-11	SCREW (3X8), TAPPING	
28	1-465-475-11	REMOTE COMMANDER (RMT-V5A)	29, 30
29	3-749-148-01	COVER, TIMER	
30	3-744-080-01	COVER, BATTERY	
31	3-743-601-01	SCREW, SIDE WOOD	
32	3-744-068-01	SCREW (2.6), TAPPING	
33	3-743-670-21	COVER, UPPER	
34	*3-704-367-01	LABEL	
35	*3-704-386-01	LABEL, TELESONIC	

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-2. SWITCHING BLOCK ASSEMBLY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BVTP3×10
56
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55
57
60
61
64
63
BVTP3×10
62
54
63
BVTP3×10
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66
65
BVTP3×10
BVTP3×10
70
67
BVTP3×10
not
supplied
BVTP3×10
69
BVTP3×10
not
supplied
68
51
52

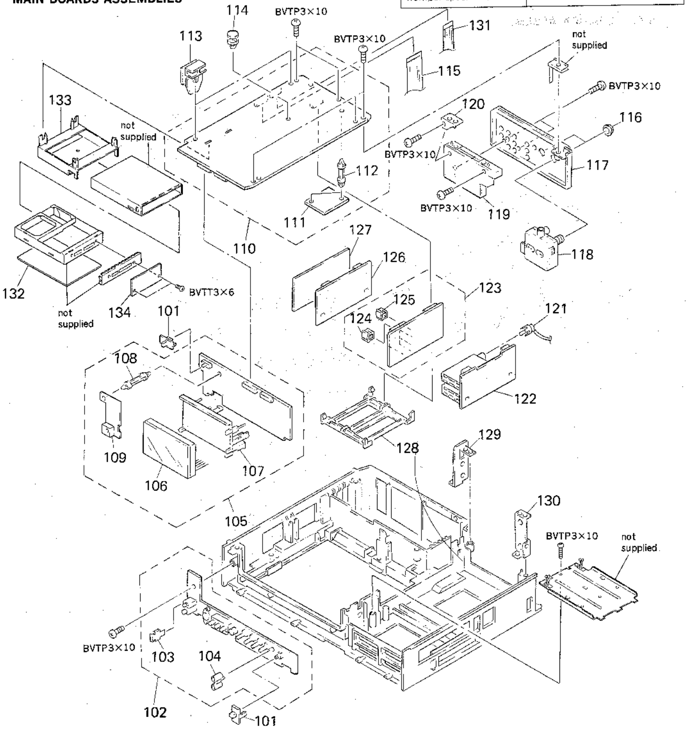
Ref.No	Part No.	Description	Remark
51	3-741-948-01	SCREW (3), SPECIAL (+) TAPPING	
52	* A-6771-254-A	FRAME BLOCK ASSY	
53	⚠ 1-413-566-11	SWITCHING BLOCK	54-57
54	* 3-743-645-01	LID, UPPER	
55	* 3-743-649-11	CASE, MAIN	
56	* 3-743-648-11	PANEL, CONNECTOR	
57	* 3-743-646-01	PLATE, BOTTOM	
58	* 3-743-643-01	BRACKET (LEFT), POWER	
59	* 3-743-642-01	BRACKET (RIGHT), POWER	
60	3-682-057-21	SPACER (SMALL)	

Ref.No	Part No.	Description	Remark
61	* 1-635-568-12	VI-94 BOARD	
62	* A-6727-234-A	YC-93 BOARD, COMPLETE	
63	* 3-682-419-41	HOLDER, P.C.B	
64	3-738-240-11	KNOB, PC BOARD	
65	* A-6727-233-A	YC-92 BOARD, COMPLETE	
66	* A-6727-235-A	LR-10 BOARD, COMPLETE	
67	* 3-744-052-01	HOLDER (LARGE), YC	
68	* 3-738-249-01	PLATE, FIXED, MD	
69	3-736-055-01	SCREW (3X8), TAPPING	
70	* 3-743-641-01	RETAINER (RIGHT), YC	

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-3. MAIN BOARDS ASSEMBLIES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BVTP3×10
113
BVTP3×10
131
not supplied
115
BVTP3×10
133
not supplied
120
116
BVTP3×10
112
117
BVTP3×10
111
119
110
127
118
126
132
BVTT3×6
123
not supplied
134
101
125
121
124
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122
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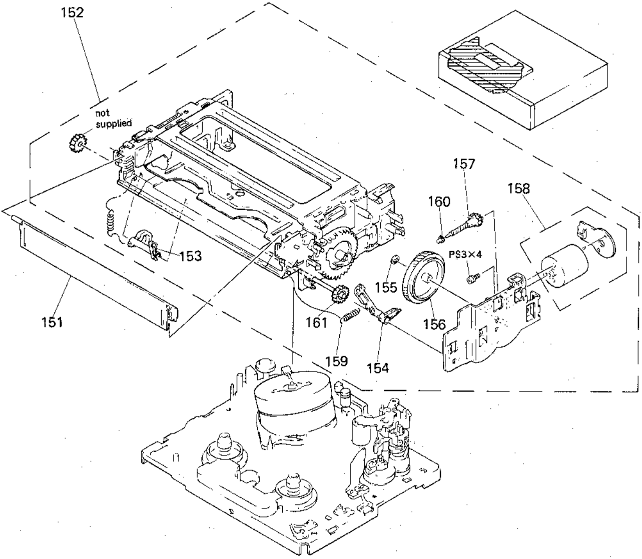
128
107
106
129
105
130
BVTP3×10
not supplied
BVTP3×10
103
104
102
101

Ref.No	Part No.	Description	Remark
101	3-743-636-01	KNOB, SLIDE	
102	*A-6725-883-A	MF-101 BOARD, COMPLETE	103, 104
103	*3-749-306-01	PLATE, GROUND, MF	
104	*3-744-056-01	COVER, LED	
105	*A-6725-882-A	MF-94 BOARD, COMPLETE	106-109
106	1-519-598-21	INDICATOR TUBE, FLUORESCENT	
107	*3-744-053-01	HOLDER, FL	
108	*3-682-419-71	HOLDER, P.C.B	
109	*1-635-215-11	RM-43 BOARD	
110	*A-6717-586-A	MA-62 BOARD, COMPLETE	111, 112
111	*1-635-225-11	SI-10 BOARD	
112	*3-682-419-41	HOLDER, P.C.B	
113	*3-743-678-01	HINGE, PC BOARD	
114	3-682-057-21	SPACER (SMALL)	
115	1-575-746-11	WIRE, FLAT TYPE (22 CORE)	
116	3-682-691-00	NUT, WASHER HEXAGON	
117	3-743-672-51	TERMINAL BOARD, INPUT OUTPUT	
118	⚠1-466-164-11	MODULATOR, RF (RFU-1015)	
119	1-537-290-31	TERMINAL BOARD	
120	*3-743-677-01	PLATE, GROUND, RF	
121	1-558-924-41	CABLE, PIN	
122	*A-6721-334-A	TU-120 BOARD, COMPLETE	
123	*A-6713-389-A	HF-9 BOARD, COMPLETE	124, 125
124	3-738-216-01	COVER, VOLUME	
125	3-729-971-01	COVER, VOLUME	
126	*A-6727-237-A	PI-20 BOARD, COMPLETE	
127	*A-6727-236-A	CG-10 BOARD, COMPLETE	
128	*3-743-673-01	HOLDER, PC BOARD	
129	*3-743-675-01	PLATE (LEFT), GROUND, MA	
130	*3-743-676-01	PLATE (RIGHT), GROUND, MA	
131	1-575-744-11	WIRE, FLAT TYPE (11 CORE)	
132	*A-6727-238-A	DG-10 BOARD, COMPLETE	
133	*3-749-334-01	HOLDER, DG	
134	*1-635-571-11	DI-42 BOARD	

6-4. FL BLOCK ASSEMBLY


152
not supplied
157
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160
PS3×4
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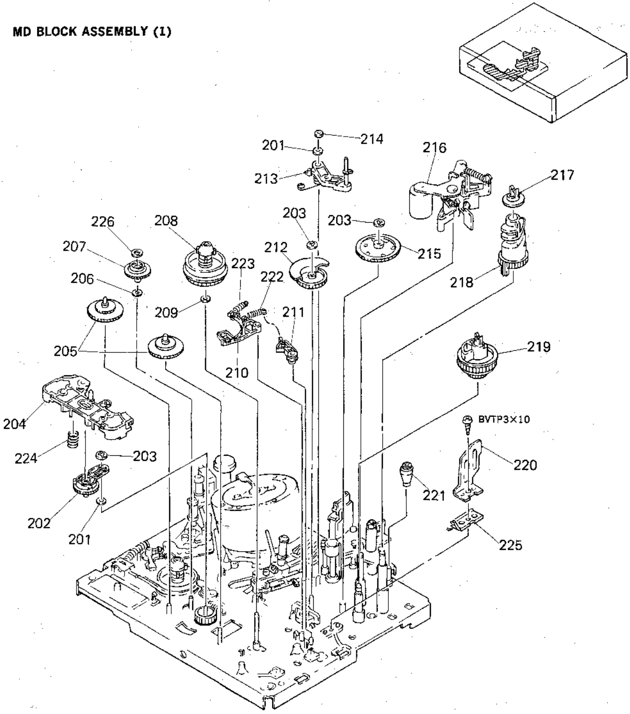
Ref.No	Part No.	Description	Remark
151	X-3743-559-1	DOOR ASSY, FL	
152	A-6751-426-A	FL BLOCK ASSY (F3)	153-161
153	3-736-163-01	LEVER, ERASING PROTECTION	
154	3-736-167-01	ARM, DOOR SWITCHING	
155	3-696-510-01	WASHER (3), STOPPER	
156	3-736-164-01	WHEEL (FL), WORM	
157	3-736-100-01	GEAR (FL), WORM	
158	X-3727-784-1	MOTOR ASSY (LOADING) (M904)	
159	3-738-285-01	SPRING, TENSION	
160	3-716-144-02	RETAINER, WORM	
161	X-3727-775-2	GEAR (RIGHT) ASSY, MIDWAY	

6-5. MD BLOCK ASSEMBLY (1)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BVTP3×10
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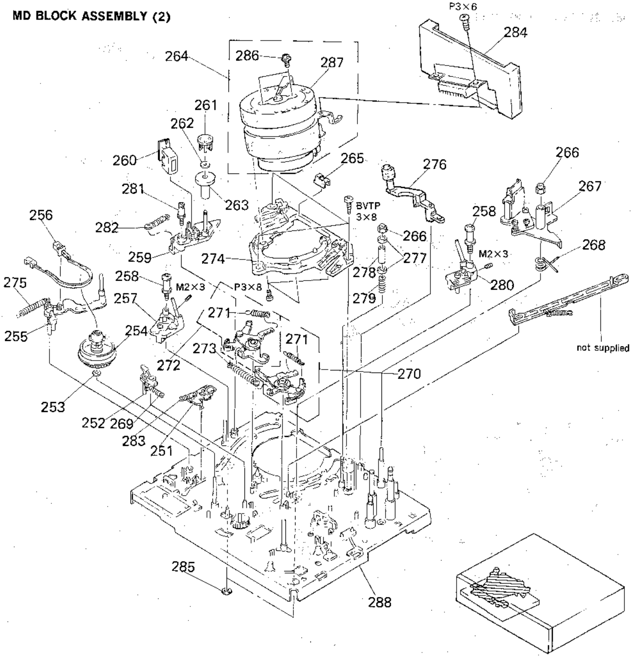
Ref.No	Part No.	Description	Remark
201	3-701-438-11	WASHER, 2.5	
202	X-3727-776-1	ARM ASSY, PENDULUM	
203	3-669-595-00	WASHER (2), STOPPER	
204	3-736-172-02	RELEASE, LOCK, REEL	
205	X-3727-795-1	GEAR ASSY, RELAY	
206	3-736-074-01	RETAINER (SMALL), THRUST	
207	3-736-037-01	GEAR, REW	
208	X-3727-798-1	TABLE ASSY, REEL	
209	3-738-212-21	RETAINER, THRUST, REEL TABLE	
210	X-3733-335-1	BRAKE ASSY (AT), T SOFT	
211	3-736-105-01	ARM, REV BRAKE	
212	3-736-143-01	GEAR, RVS CAM	
213	X-3729-911-1	ARM ASSY, RVS	
214	3-736-740-01	NUT (M2X0.25), NYLON	
215	3-736-116-01	GEAR, COMMUNICATION	
216	X-3727-770-1	PINCH ROLLER BLOCK ASSY	
217	3-736-111-01	STOPPER	
218	3-736-136-01	CAM, ELEVATOR	
219	3-736-135-01	GEAR, PRESS CAM	
220	3-736-109-01	PLATE, OPEN, LID	
221	3-738-250-01	SCREW, AC ADJUSTMENT	
222	3-736-025-01	SPRING (REV BRAKE), TENSION	
223	3-736-024-01	SPRING, TENSION	
224	3-736-020-11	SPRING, COMPRESSION	
225	3-744-227-01	SPRING (ATOM), FL GROUND	
226	3-736-069-01	RETAINER, SPRING	

6-6. MD BLOCK ASSEMBLY (2)


P3×6
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264
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263
BVTP 3×8
258
256
282
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268
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274
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M2×3
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275
M2×3
P3×8
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not supplied
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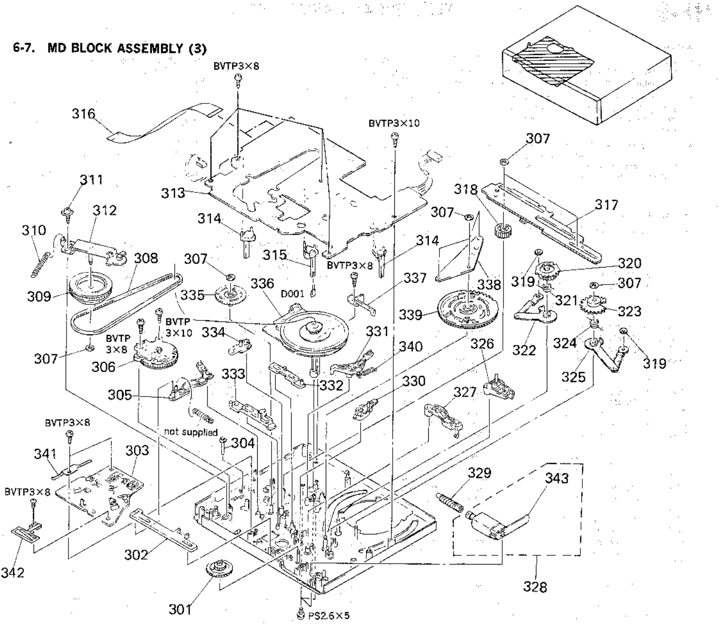
288

Ref.No	Part No.	Description	Remark
251	A-6759-483-A	TAKE-UP BLOCK ASSY (AT), S	
252	3-736-075-01	BRAKE, S SOFT	
253	3-738-212-21	RETAINER, THRUST, REEL TABLE	
254	X-3729-935-3	TABLE ASSY, REEL, SUPPLY	
255	3-736-151-11	ARM (POM), TENSION REGULATOR	
256	X-3727-797-1	BAND ASSY, TENSION REGULATOR	
257	X-3727-786-1	SHUTTLE (LEFT) ASSY	
258	X-3733-301-1	ROLLER ASSY, GUIDE	
259	X-3727-767-1	BASE ASSY, STABILIZER	
260	1-543-647-11	HEAD, FE	
261	3-736-082-01	RETAINER, TS THRUST	
262	3-741-925-01	RING, RETAINING	
263	X-3727-771-1	STABLILIZER ASSY, TAPE	
264	8-848-531-11	DRUM ASSY (DZH-18A-R) (M901)	286, 287
265	3-736-795-01	STOPPER	
266	3-736-041-01	NUT (N3), NYLON	
267	A-6761-129-A	HEAD BLOCK ASSY, ACE	
268	3-736-042-01	SPRING, TORSION	
269	3-736-047-01	SPRING (S SOFT), TENSION	
270	X-3729-926-1	BRAKE ASSY (2), T	271
271	3-738-220-01	SPRING (MAIN BRAKE 2), TENSION	
272	X-3733-336-2	BRAKE ASSY (2) (AT), S	271
273	3-738-221-01	SPRING (MAIN BRAKE 1), TENSION	
274	X-3743-511-4	BASE ASSY (S), DRUM	
275	3-733-389-11	SPRING, TENSION	
276	A-6747-267-A	ARM BLOCK ASSY (S), C ROLLER	
277	3-736-733-01	FLANGE, 7 GUIDE	
278	3-736-730-01	SLEEVE, 7 GUIDE	
279	3-749-099-01	SPRING (7 GUIDE),COMPRESSION	
280	X-3727-787-1	SHUTTLE (RIGHT) ASSY	
281	X-3727-788-1	ROLLER ASSY, GUIDE, 2	
282	3-736-745-01	SPRING	
283	3-738-284-01	SPRING, TENSION	
284	*A-6727-219-A	RP-76 BOARD, COMPLETE	
285	3-736-073-01	SLIDER, POLYETHYLENE	
286	2-643-205-01	SCREW, (PSW 3X8)	
287	8-848-534-01	DRUM ASSY, ROTARY UPPER (DZR-18-R)	
288	*X-3729-912-7	CHASSIS ASSY, MECHANICAL	

6-7. MD BLOCK ASSEMBLY (3)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BVTP3×10
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BVTP3×8
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335
336
D001
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338
319
307
321
BVTP
3×10
339
323
BVTP
3×8
334
331
340
326
322
324
319
307
306
333
332
330
325
305
327
BVTP3×8
not supplied
304
341
303
329
343
BVTP3×8
302
342
328
301
PS2.6×5

Ref.No	Part No.	Description	Remark
301	3-736-015-01	WHEEL (CAM), WORM	
302	3-736-158-01	PLATE, SLIDE, PENDULUM	
303	A-6739-084-A	CHASSIS BLOCK ASSY, SUB	
304	3-736-091-01	PIN, SWITCH	
305	X-372-992-41	ARM, PENDULUM FUNCTION	
306	1-571-920-11	SWITCH, ROTARY	
307	3-669-595-00	WASHER (2), STOPPER	
308	3-736-013-01	BELT, TIMING	
309	X-3727-782-1	PULLEY ASSY	
310	3-736-089-01	SPRING, TENSION	
311	3-733-386-01	SCREW (3X8), WASHER	
312	X-3727-761-1	ARM ASSY, ADJUSTMENT	
313	*A-6754-131-A	MD-49 BOARD, COMPLETE	
314	3-736-149-01	HOLDER, ST SENSOR	
315	*3-736-144-01	HOLDER, LED	
316	1-575-745-11	WIRE, FLAT TYPE (19 CORE)	
317	3-736-177-01	PLATE, SLIDE, MODE	
318	3-733-394-01	GEAR, RVS RELAY	
319	3-736-073-01	SLIDER, POLYETHYLENE	
320	3-736-148-01	GEAR (RIGHT), THREADING	
321	3-736-092-01	SPRING (RIGHT), TORSION	
322	X-3727-777-1	ARM (RIGHT) ASSY, THREADING	
323	3-736-147-01	GEAR (LEFT), THREADING	
324	3-736-040-01	SPRING (LEFT), TORSION	
325	X-3727-778-1	ARM (LEFT) ASSY, THREADING	
326	3-736-142-01	ARM,TENSION REGULATOR FUNCTION	
327	3-736-140-01	ARM, S TAKE-UP	
328	X-3733-302-1	MOTOR ASSY, CAM (M903)	
329	3-733-395-01	GEAR (CAM), WORM	
330	3-733-397-01	ARM, BRAKE FUNCTION	
331	X-3733-338-1	BRAKE ASSY (AT), CAP	
332	3-733-398-01	PLATE, SLIDE, BRAKE	
333	3-736-103-01	PLATE, SLIDE, LIMITER	
334	3-736-016-01	ARM, LIMITER FUNCTION	
335	3-736-170-01	GEAR, RKB CAM	
336	8-835-394-01	MOTOR, DC U-26F (CAPSTAN) (M902)	
337	3-736-744-01	RETAINER, ROTOR	
338	3-733-396-01	HOLDER, CAM GEAR	
339	3-736-176-01	GEAR, CAM	
340	3-738-237-01	SPRING (CAP BRAKE), TENSION	
341	3-741-950-01	SPRING (AT), LEAF, SC GROUND	
342	*3-744-024-01	PLATE, GROUND, MD	
343	*1-633-460-11	CA-41 BOARD	

HF-9

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
	*A-6713-389-A	HF-9 BOARD, COMPLETE ***************				(Rel. No. 9000 series)
	3-729-971-01	COVER, VOLUME (RV003, 004, 007, 009)				
	3-738-216-01	COVER, VOLUME (RV002, 008)				
		CAPACITOR				
C001	1-124-239-00	ELECT	6.8MF	20%	16V	
C002	1-130-487-00	MYLAR	0.022MF	5%	50V	
C003	1-123-369-00	ELECT	4.7MF	20%	25V	
C004	1-130-475-00	MYLAR	0.0022MF	5%	50V	
C005	1-123-321-00	ELECT	220MF	20%	16V	
C006	1-123-875-11	ELECT	10MF	20%	50V	
C007	1-130-483-00	MYLAR	0.01MF	5%	50V	
C009	1-123-381-00	ELECT	2.2MF	20%	50V	
C011	1-123-356-00	ELECT	10MF	20%	25V	
C012	1-123-356-00	ELECT	10MF	20%	25V	
C013	1-126-101-11	ELECT	100MF	20%	16V	
C014	1-126-157-11	ELECT	10MF	20%	16V	
C015	1-126-157-11	ELECT	10MF	20%	16V	
C016	1-124-791-11	ELECT	1MF	20%	50V	
C017	1-124-257-00	ELECT	2.2MF	20%	50V	
C018	1-126-101-11	ELECT	100MF	20%	16V	
C019	1-123-356-00	ELECT	10MF	20%	25V	
C020	1-123-356-00	ELECT	10MF	20%	25V	
C022	1-123-381-00	ELECT	2.2MF	20%	50V	
C024	1-130-483-00	MYLAR	0.01MF	5%	50V	
C025	1-123-875-11	ELECT	10MF	20%	50V	
C026	1-123-321-00	ELECT	220MF	20%	16V	
C027	1-130-475-00	MYLAR	0.0022MF	5%	50V	
C028	1-123-369-00	ELECT	4.7MF	20%	25V	
C029	1-130-487-00	MYLAR	0.022MF	5%	50V	
C030	1-124-239-00	ELECT	6.8MF	20%	16V	
C031	1-126-094-11	ELECT	4.7MF	20%	25V	
C032	1-124-438-00	ELECT	1MF	20%	50V	
C033	1-123-356-00	ELECT	10MF	20%	25V	
C034	1-130-471-00	MYLAR	0.001MF	5%	50V	
C035	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C036	1-123-369-00	ELECT	4.7MF	20%	25V	
C037	1-123-369-00	ELECT	4.7MF	20%	25V	
C038	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C041	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C042	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C043	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C044	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C045	1-130-493-00	MYLAR	0.068MF	5%	50V	
C050	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C051	1-130-483-00	MYLAR	0.01MF	5%	50V	
C052	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C053	1-123-333-00	ELECT	100MF	20%	16V	
C054	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C055	1-123-369-00	ELECT	4.7MF	20%	25V	
C056	1-123-369-00	ELECT	4.7MF	20%	25V	
C057	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C058	1-130-471-00	MYLAR	0.001MF	5%	50V	
C059	1-123-356-00	ELECT	10MF	20%	25V	
C060	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C061	1-126-101-11	ELECT	100MF	20%	16V	
C065	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
		CONNECTOR				
CN001	*1-563-258-11	SOCKET, CONNECTOR 15P				
CN002	*1-563-258-11	SOCKET, CONNECTOR 15P				
		DIODE				
D001	8-719-911-19	DIODE 1SS119				
D002	8-719-911-19	DIODE 1SS119				
D003	8-719-104-34	DIODE 1S2836				
		FILTER				
FL001	1-236-204-11	BPF				
FL002	1-236-203-11	BPF				
		IC				
IC001	8-759-420-18	IC AN3972FC				
IC002	8-759-420-87	IC AN3933SC				
IC003	8-759-982-21	IC RC78L05A				
IC004	8-759-924-46	IC BA4560F				
IC005	8-759-946-44	IC TK15120M				
IC006	8-759-946-44	IC TK15120M				
		RESISTOR				
R001	1-249-417-11	METAL	1K	5%	1/4W	
R002	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R003	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R004	1-214-723-00	CARBON	560	5%	1/4W	
R005	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R006	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R007	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R008	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R009	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R011	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R012	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R013	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R014	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R015	1-214-723-00	CARBON	560	5%	1/4W	
R016	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R017	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R018	1-249-417-11	METAL	1K	5%	1/4W	
R019	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R020	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R021	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R022	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R023	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R024	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R025	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R026	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R027	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	

Ref.No	Part No.	Description			Remark
R028	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R029	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R032	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R033	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R034	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R035	1-249-427-11	METAL	6.8K	5%	1/4W
R036	1-249-427-11	METAL	6.8K	5%	1/4W
R037	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R041	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R042	1-249-428-11	METAL	8.2K	5%	1/4W
R043	1-249-428-11	METAL	8.2K	5%	1/4W
R044	1-249-430-11	METAL	12K	5%	1/4W
R045	1-249-430-11	METAL	12K	5%	1/4W
R048	1-249-441-11	METAL	100K	5%	1/4W
R049	1-249-441-11	METAL	100K	5%	1/4W
R068	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R201	1-216-295-00	METAL GLAZE	0	5%	1/10W
R202	1-216-295-00	METAL GLAZE	0	5%	1/10W
R203	1-216-295-00	METAL GLAZE	0	5%	1/10W
R301	1-216-296-00	METAL GLAZE	0	5%	1/8W
R302	1-216-296-00	METAL GLAZE	0	5%	1/8W
R303	1-216-296-00	METAL GLAZE	0	5%	1/8W

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV002	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K
RV003	1-238-167-11	RES, ADJ, CARBON 22K
RV004	1-238-167-11	RES, ADJ, CARBON 22K
RV005	1-230-498-11	RES, ADJ, CARBON 47K
RV006	1-230-498-11	RES, ADJ, CARBON 47K
RV007	1-238-167-11	RES, ADJ, CARBON 22K
RV008	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K
RV009	1-238-167-11	RES, ADJ, CARBON 22K

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*A-6717-586-A MA-62 BOARD, COMPLETE (Ref. No. 4000 series)
* * * * * * * * * * * * * * * *
(Including the SI-10 BOARD)

*3-682-419-41 HOLDER, P.C.B
*3-743-679-01 CASE, SHIELD, AU

CAPACITOR

Ref.No	Part No.	Description			Remark
C101	1-123-875-11	ELECT	10MF	20%	50V
C102	1-123-875-11	ELECT	10MF	20%	50V
C103	1-123-875-11	ELECT	10MF	20%	50V
C104	1-123-875-11	ELECT	10MF	20%	50V
C231	1-124-477-11	ELECT	47MF	20%	16V
C232	1-124-471-00	ELECT	1000MF	20%	6.3V
C233	1-124-477-11	ELECT	47MF	20%	16V
C234	1-124-443-00	ELECT	100MF	20%	10V
C235	1-124-471-00	ELECT	1000MF	20%	6.3V
C250	1-109-675-11	MICA	120PF	5%	500V
C251	1-124-446-11	ELECT	47MF	20%	10V
C252	1-164-083-11	CERAMIC	680PF	10%	50V
C254	1-102-123-00	CERAMIC	0.0033MF	10%	50V
C255	1-126-233-11	ELECT	22MF	20%	25V
C256	1-124-252-00	ELECT	0.33MF	20%	50V
C257	1-124-446-11	ELECT	47MF	20%	10V
C258	1-130-483-00	MYLAR	0.01MF	5%	50V
C259	1-124-791-11	ELECT	1MF	20%	50V
C261	1-126-233-11	ELECT	22MF	20%	25V
C262	1-124-446-11	ELECT	47MF	20%	10V
C264	1-102-978-00	CERAMIC	220PF	5%	50V
C265	1-124-791-11	ELECT	1MF	20%	50V
C266	1-124-446-11	ELECT	47MF	20%	10V
C267	1-124-446-11	ELECT	47MF	20%	10V
C268	1-124-791-11	ELECT	1MF	20%	50V
C269	1-124-791-11	ELECT	1MF	20%	50V
C270	1-124-791-11	ELECT	1MF	20%	50V
C271	1-161-053-00	CERAMIC	0.015MF	10%	25V
C273	1-161-020-11	CERAMIC	0.039MF	10%	16V
C274	1-124-927-11	ELECT	4.7MF	20%	50V
C275	1-124-446-11	ELECT	47MF	20%	10V
C276	1-164-087-11	CERAMIC	0.0015MF	10%	50V
C277	1-161-051-00	CERAMIC	0.01MF	10%	25V
C278	1-136-561-11	FILM	0.0068MF	10%	400V
C280	1-130-483-00	MYLAR	0.01MF	5%	50V
C281	1-161-056-00	CERAMIC	0.027MF	10%	25V
C282	1-124-446-11	ELECT	47MF	20%	10V
C283	1-137-075-11	FILM	0.068MF	5%	100V
C284	1-164-087-11	CERAMIC	0.0015MF	10%	50V
C285	1-102-114-00	CERAMIC	470PF	10%	50V
C291	1-161-047-00	CERAMIC	0.0047MF	10%	25V
C292	1-162-843-11	CERAMIC	0.022MF	10%	16V
C293	1-126-103-11	ELECT	470MF	20%	16V
C294	1-162-839-11	CERAMIC	0.01MF	10%	16V
C295	1-162-839-11	CERAMIC	0.01MF	10%	16V
C296	1-162-839-11	CERAMIC	0.01MF	10%	16V
C297	1-162-839-11	CERAMIC	0.01MF	10%	16V
C298	1-162-839-11	CERAMIC	0.01MF	10%	16V
C301	1-164-096-11	CERAMIC	0.01MF		50V
C302	1-164-096-11	CERAMIC	0.01MF		50V
C303	1-164-096-11	CERAMIC	0.01MF		50V
C304	1-123-875-11	ELECT	10MF	20%	50V
C305	1-123-875-11	ELECT	10MF	20%	50V
C306	1-123-875-11	ELECT	10MF	20%	50V
C401	1-123-875-11	ELECT	10MF	20%	50V
C402	1-124-791-11	ELECT	1MF	20%	50V
C403	1-123-875-11	ELECT	10MF	20%	50V
C404	1-161-043-00	CERAMIC	0.0022MF	20%	16V
C405	1-124-499-11	ELECT	1MF	20%	50V
C406	1-124-446-11	ELECT	47MF	20%	10V
C407	1-164-070-11	CERAMIC	100PF	5%	50V
C408	1-164-096-11	CERAMIC	0.01MF		50V
C409	1-164-093-11	CERAMIC	0.0047MF	10%	25V
C410	1-164-096-11	CERAMIC	0.01MF		50V
C411	1-124-446-11	ELECT	47MF	20%	10V
C413	1-130-483-00	MYLAR	0.01MF	5%	50V
C414	1-102-121-00	CERAMIC	0.0022MF	10%	50V
C415	1-102-947-00	CERAMIC	10PF	0.5PF	50V
C416	1-162-847-11	CERAMIC	0.047MF	20%	16V
C422	1-124-446-11	ELECT	47MF	20%	10V
C423	1-126-233-11	ELECT	22MF	20%	25V
C425	1-130-487-00	MYLAR	0.022MF	5%	50V
C426	1-124-925-11	ELECT	2.2MF	20%	50V
C427	1-130-489-00	MYLAR	0.033MF	5%	50V
C428	1-130-491-00	MYLAR	0.047MF	5%	50V
C431	1-162-290-31	CERAMIC	470PF	10%	50V
C483	1-131-344-00	ELECT	0.33MF	10%	25V
C501	1-164-096-11	CERAMIC	0.01MF		50V
C504	1-123-875-11	ELECT	10MF	20%	50V
C505	1-126-103-11	ELECT	470MF	20%	16V
C506	1-123-875-11	ELECT	10MF	20%	50V
C507	1-101-006-00	CERAMIC	0.047MF		50V
C508	1-124-478-11	ELECT	100MF	20%	25V
C509	1-102-953-00	CERAMIC	18PF	5%	50V
C510	1-102-953-00	CERAMIC	18PF	5%	50V
C515	1-164-096-11	CERAMIC	0.01MF		50V
C519	1-164-096-11	CERAMIC	0.01MF		50V
C520	1-102-963-00	CERAMIC	33PF	10%	50V

When indicating parts by reference number, please include the board name.

MA-62

Ref.No	Part No.	Description			Remark
C522	1-164-068-11	CERAMIC	82PF	5%	50V
C523	1-164-096-11	CERAMIC	0.01MF		50V
C524	1-124-463-00	ELECT	0.1MF	20%	50V
C525	1-102-114-00	CERAMIC	470PF	10%	50V
C531	1-124-925-11	ELECT	2.2MF	20%	50V
C536	1-161-772-11	CERAMIC	0.1MF	20%	16V
C537	1-123-875-11	ELECT	10MF	20%	50V
C538	1-124-478-11	ELECT	100MF	20%	25V
C539	1-102-978-00	CERAMIC	220PF	5%	50V
C541	1-161-379-00	CERAMIC	0.01MF	30%	16V
C542	1-124-477-11	ELECT	47MF	20%	25V
C543	1-161-057-00	CERAMIC	0.033MF	10%	25V
C544	1-101-005-00	CERAMIC	0.022MF		50V
C545	1-164-085-11	CERAMIC	0.001MF	10%	50V
C802	1-123-875-11	ELECT	10MF	20%	50V
C809	1-123-875-11	ELECT	10MF	20%	50V
C811	1-123-875-11	ELECT	10MF	20%	50V
C812	1-124-927-11	ELECT	4.7MF	20%	50V
C813	1-124-791-11	ELECT	1MF	20%	50V
C814	1-102-973-00	CERAMIC	100PF	10%	50V
C815	1-102-963-00	CERAMIC	33PF	10%	50V
C816	1-123-875-11	ELECT	10MF	20%	50V
C818	1-162-839-11	CERAMIC	0.01MF	10%	16V
C820	1-162-835-11	CERAMIC	0.0047MF	10%	16V
C821	1-164-085-11	CERAMIC	0.001MF	10%	50V
C822	1-124-925-11	ELECT	2.2MF	20%	50V
C825	1-164-096-11	CERAMIC	0.01MF		50V
C826	1-164-096-11	CERAMIC	0.01MF		50V
C827	1-164-096-11	CERAMIC	0.01MF		50V
C829	1-164-096-11	CERAMIC	0.01MF		50V
C834	1-164-096-11	CERAMIC	0.01MF		50V
C838	1-123-875-11	ELECT	10MF	20%	50V
C840	1-123-875-11	ELECT	10MF	20%	50V
C841	1-123-875-11	ELECT	10MF	20%	50V
C842	1-123-875-11	ELECT	10MF	20%	50V
C844	1-164-096-11	CERAMIC	0.01MF		50V
C846	1-164-096-11	CERAMIC	0.01MF		50V
		CONNECTOR			
CN004	1-563-596-11	CONNECTOR, FLEXIBLE 19P			
CN007	1-563-596-11	CONNECTOR, FLEXIBLE 19P			
CN511	1-568-093-11	CONNECTOR (PLUG) 20P			
CN512	1-568-094-11	CONNECTOR (PLUG) 22P			
CN513	*1-506-470-11	PIN, CONNECTOR 5P			
CN514	1-506-469-11	PIN, CONNECTOR 4P			
CN516	*1-568-783-11	PIN, CONNECTOR 6P			
CN517	*1-568-783-31	PIN, CONNECTOR 6P			
CN521	1-568-089-11	CONNECTOR (PLUG) 12P			
CN522	*1-568-091-11	CONNECTOR (PLUG) 16P			
CN531	1-506-472-11	PIN, CONNECTOR 7P			
CN532	*1-568-783-11	PIN, CONNECTOR 6P			
CN541	*1-568-790-31	PIN, CONNECTOR 13P			
CN542	*1-568-787-11	PIN, CONNECTOR 10P			
CN551	*1-568-088-11	CONNECTOR (PLUG) 10P			
CN552	1-568-089-11	CONNECTOR (PLUG) 12P			
CN553	1-506-470-11	PIN, CONNECTOR 5P			
CN561	1-569-695-21	CONNECTOR, BOARD TO BOARD 17P			
CN562	1-569-696-21	CONNECTOR, BOARD TO BOARD 19P			
CN571	*1-506-744-11	PIN, CONNECTOR 15P			
CN572	*1-506-744-11	PIN, CONNECTOR 15P			
CN573	*1-560-892-00	PIN, CONNECTOR 4P			
CN574	*1-560-891-00	PIN, CONNECTOR 3P			
CN581	1-563-588-11	CONNECTOR, FLEXIBLE 11P			
CN582	1-563-599-11	CONNECTOR, FLEXIBLE 22P			
CN583	1-569-763-11	CONNECTOR, BOARD TO BOATD 30P			
CN584	1-569-763-11	CONNECTOR, BOARD TO BOATD 30P			
CN585	1-568-087-11	CONNECTOR (PLUG) 8P			
CN586	1-568-087-11	CONNECTOR (PLUG) 8P			
CN587	1-506-468-11	PIN, CONNECTOR 3P			
CN591	1-566-119-11	CONNECTOR, BOARD TO BOARD 6P			
CN593	1-506-768-11	CONNECTOR, BOARD TO BOARD 4P			
		DIODE			
D291	8-719-911-19	DIODE 1SS119			
D292	8-719-911-19	DIODE 1SS119			
D293	8-719-911-19	DIODE 1SS119			
D401	8-719-911-19	DIODE 1SS119			
D402	8-719-911-19	DIODE 1SS119			
D403	8-719-911-19	DIODE 1SS119			
D404	8-719-911-19	DIODE 1SS119			
D409	8-719-101-50	DIODE RD5.1EL2			
D410	8-719-911-19	DIODE 1SS119			
D423	8-719-911-19	DIODE 1SS119			
D501	8-719-913-44	DIODE ERA82-004			
D502	8-719-911-19	DIODE 1SS119			
D505	8-719-911-19	DIODE 1SS119			
D508	8-719-101-47	DIODE RD4.7EL2			
D516	8-719-911-19	DIODE 1SS119			
D517	8-719-911-19	DIODE 1SS119			
D518	8-719-200-82	DIODE 11ES2			
D519	8-719-109-93	DIODE RD6.2ES-B2			
D703	8-719-911-19	DIODE 1SS119			
D704	8-719-911-19	DIODE 1SS119			
D803	8-719-911-19	DIODE 1SS119			
D804	8-719-911-19	DIODE 1SS119			
D807	8-719-911-19	DIODE 1SS119			
		IC			
IC251	8-759-805-20	IC LA7297			
IC401	8-759-000-49	IC MC14066BCP			
IC402	8-759-632-58	IC M52435P			
IC403	8-759-008-70	IC BA10358			
IC404	8-759-981-85	IC RC4556D			
IC406	8-759-938-12	IC BA10324			
IC501	8-752-816-57	IC CXP80624-017Q			
IC502	⚠8-759-983-45	IC BA6238A			
IC503	8-759-035-36	IC MC68HC05P7			
IC801	8-759-208-08	IC TC4052BPHB			
IC802	8-759-923-90	IC BA4560			
IC803	8-759-208-08	IC TC4052BPHB			
IC804	8-759-923-90	IC BA4560			
IC806	8-759-822-71	IC LA7954			
IC809	8-759-822-71	IC LA7954			
		COIL			
L201	1-408-409-00	INDUCTOR	10UH		
L202	1-408-409-00	INDUCTOR	10UH		
L210	1-410-336-11	INDUCTOR	220UH		
L211	1-410-336-11	INDUCTOR	220UH		
L251	1-410-087-31	INDUCTOR	10MMH		
L252	1-412-092-11	INDUCTOR, SMALL TYPE			
L253	1-410-687-11	INDUCTOR	1.2MMH		
L254	1-408-426-00	INDUCTOR	270UH		
L255	1-408-418-00	INDUCTOR	56UH		
L256	1-410-521-11	INDUCTOR	100UH		
L257	1-410-521-11	INDUCTOR	100UH		
L258	1-410-521-11	INDUCTOR	100UH		
L259	1-410-521-11	INDUCTOR	100UH		
L260	1-410-521-11	INDUCTOR	100UH		
L261	1-410-521-11	INDUCTOR	100UH		

When indicating parts by reference number, please include the board name.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description				Remark
L501	1-408-413-00	INDUCTOR	22UH			
L502	1-408-413-00	INDUCTOR	22UH			
L503	1-408-413-00	INDUCTOR	22UH			
L504	1-410-501-11	INDUCTOR	2.2UH			
		IC LINK				
PS202 ⚠	1-532-605-00	LINK, IC (ICP-N10)				
		TRANSISTOR				
Q101	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q102	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q203	8-729-920-68	TRANSISTOR 2SA933S-QR				
Q204	8-729-920-68	TRANSISTOR 2SA933S-QR				
Q251	8-729-102-03	TRANSISTOR 2SD1020				
Q253 ⚠	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q254 ⚠	8-729-140-96	TRANSISTOR 2SD774-34				
Q291	8-729-900-61	TRANSISTOR DTA114ES				
Q292	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q293	8-729-900-61	TRANSISTOR DTA114ES				
Q294	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q295	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q296	8-729-900-80	TRANSISTOR DTC114ES				
Q301	8-729-920-68	TRANSISTOR 2SA933S-QR				
Q302	8-729-920-68	TRANSISTOR 2SA933S-QR				
Q401	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q403	8-729-115-10	TRANSISTOR 2SK105A-10				
Q404	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q405	8-729-900-89	TRANSISTOR DTC144ES				
Q410	8-729-900-65	TRANSISTOR DTA144ES				
Q412	8-729-900-89	TRANSISTOR DTC144ES				
Q423	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q428	8-729-920-68	TRANSISTOR 2SA933S-QR				
Q430	8-729-900-89	TRANSISTOR DTC144ES				
Q431	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q434	8-729-601-47	TRANSISTOR 2SK381TP-A				
Q435	8-729-601-47	TRANSISTOR 2SK381TP-A				
Q501	8-729-900-61	TRANSISTOR DTA114ES				
Q502	8-729-900-61	TRANSISTOR DTA114ES				
Q503	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q504	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q505	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q506	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q507	8-729-900-61	TRANSISTOR DTA114ES				
Q508	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q514	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q515	8-729-920-68	TRANSISTOR 2SA933S-QR				
Q516	8-729-900-80	TRANSISTOR DTC114ES				
Q517	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q518	8-729-900-89	TRANSISTOR DTC144ES				
Q519	8-729-900-65	TRANSISTOR DTA144ES				
Q701	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q801	8-729-900-89	TRANSISTOR DTC144ES				
Q802	8-729-900-89	TRANSISTOR DTC144ES				
Q803	8-729-920-68	TRANSISTOR 2SA933S-QR				
Q804	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q805 ⚠	8-729-920-70	TRANSISTOR 2SC1740S-QR				
Q807 ⚠	8-729-920-70	TRANSISTOR 2SC1740S-QR				
		RESISTOR				
R101	1-249-435-11	CARBON	33K	5%	1/4W	
R102	1-249-441-11	CARBON	100K	5%	1/4W	
R103	1-249-417-11	CARBON	1K	5%	1/4W	
R104	1-249-423-11	CARBON	3.3K	5%	1/4W	
R105	1-249-423-11	CARBON	3.3K	5%	1/4W	
R106	1-249-441-11	CARBON	100K	5%	1/4W	
R107	1-249-441-11	CARBON	100K	5%	1/4W	
R108	1-249-417-11	CARBON	1K	5%	1/4W	
R136	1-249-413-11	CARBON	470	5%	1/4W	
R137	1-249-413-11	CARBON	470	5%	1/4W	
R138 ⚠	1-249-385-11	CARBON	2.2	5%	1/4W	F
R201	1-249-417-11	CARBON	1K	5%	1/4W	
R210	1-249-405-11	CARBON	100	5%	1/4W	
R211	1-249-405-11	CARBON	100	5%	1/4W	
R222	1-249-410-11	CARBON	270	5%	1/4W	
R224	1-249-406-11	CARBON	120	5%	1/4W	
R225	1-249-406-11	CARBON	120	5%	1/4W	
R227	1-247-804-11	CARBON	75	5%	1/4W	
R232	1-247-804-11	CARBON	75	5%	1/4W	
R251	1-249-430-11	CARBON	12K	5%	1/4W	
R252	1-249-393-11	CARBON	10	5%	1/4W	
R253	1-249-412-11	CARBON	390	5%	1/4W	
R254	1-249-411-11	CARBON	330	5%	1/4W	
R255	1-247-885-00	CARBON	180K	5%	1/4W	
R256	1-247-854-11	CARBON	9.1K	5%	1/4W	
R257	1-247-872-11	CARBON	51K	5%	1/4W	
R258	1-249-434-11	CARBON	27K	5%	1/4W	
R259	1-249-421-11	CARBON	2.2K	5%	1/4W	
R260	1-247-903-00	CARBON	1M	5%	1/4W	
R261	1-247-895-00	CARBON	470K	5%	1/4W	
R262	1-249-438-11	CARBON	56K	5%	1/4W	
R263	1-249-432-11	CARBON	18K	5%	1/4W	
R264	1-249-427-11	CARBON	6.8K	5%	1/4W	
R265	1-249-429-11	CARBON	10K	5%	1/4W	
R266	1-249-429-11	CARBON	10K	5%	1/4W	
R267	1-249-429-11	CARBON	10K	5%	1/4W	
R268	1-249-429-11	CARBON	10K	5%	1/4W	
R269	1-249-411-11	CARBON	330	5%	1/4W	
R270	1-249-422-11	CARBON	2.7K	5%	1/4W	
R272	1-249-411-11	CARBON	330	5%	1/4W	
R273	1-249-428-11	CARBON	8.2K	5%	1/4W	
R274	1-249-434-11	CARBON	27K	5%	1/4W	
R275 ⚠	1-249-387-11	CARBON	3.3	5%	1/4W	F
R277	1-249-429-11	CARBON	10K	5%	1/4W	
R278	1-249-425-11	CARBON	4.7K	5%	1/4W	
R282	1-249-429-11	CARBON	10K	5%	1/4W	
R283 ⚠	1-249-387-11	CARBON	3.3	5%	1/4W	F
R288	1-249-425-11	CARBON	4.7K	5%	1/4W	
R289	1-249-425-11	CARBON	4.7K	5%	1/4W	
R290	1-247-739-11	CARBON	100	5%	1/2W	F
R291	1-249-429-11	CARBON	10K	5%	1/4W	
R292	1-249-421-11	CARBON	2.2K	5%	1/4W	
R293	1-249-437-11	CARBON	47K	5%	1/4W	
R294	1-249-413-11	CARBON	470	5%	1/4W	
R295	1-249-425-11	CARBON	4.7K	5%	1/4W	
R296	1-249-437-11	CARBON	47K	5%	1/4W	
R297	1-249-407-11	CARBON	150	5%	1/4W	
R299	1-249-437-11	CARBON	47K	5%	1/4W	
R301	1-249-417-11	CARBON	1K	5%	1/4W	
R302	1-249-417-11	CARBON	1K	5%	1/4W	
R305	1-249-417-11	CARBON	1K	5%	1/4W	
R306	1-249-417-11	CARBON	1K	5%	1/4W	
R307	1-249-417-11	CARBON	1K	5%	1/4W	
R308	1-249-417-11	CARBON	1K	5%	1/4W	
R309	1-249-417-11	CARBON	1K	5%	1/4W	
R310	1-249-417-11	CARBON	1K	5%	1/4W	
R401	1-249-429-11	CARBON	10K	5%	1/4W	
R403	1-249-433-11	CARBON	22K	5%	1/4W	
R404	1-249-433-11	CARBON	22K	5%	1/4W	
R405	1-249-433-11	CARBON	22K	5%	1/4W	
R406	1-249-433-11	CARBON	22K	5%	1/4W	

When indicating parts by reference number, please include the board name.

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

MA-62

Ref.No	Part No.	Description				Remark
R408	1-249-429-11	CARBON	10K	5%	1/4W	
R411	1-249-429-11	CARBON	10K	5%	1/4W	
R412	1-249-427-11	CARBON	6.8K	5%	1/4W	
R413	1-249-441-11	CARBON	100K	5%	1/4W	
R414	1-247-887-00	CARBON	220K	5%	1/4W	
R415	1-249-405-11	CARBON	100	5%	1/4W	
R416	1-247-885-00	CARBON	180K	5%	1/4W	
R417	1-249-429-11	CARBON	10K	5%	1/4W	
R418	1-247-889-00	CARBON	270K	5%	1/4W	
R419	1-249-437-11	CARBON	47K	5%	1/4W	
R420	1-249-413-11	CARBON	470	5%	1/4W	
R421	1-249-433-11	CARBON	22K	5%	1/4W	
R424	1-249-433-11	CARBON	22K	5%	1/4W	
R425	1-249-437-11	CARBON	47K	5%	1/4W	
R426	1-249-433-11	CARBON	22K	5%	1/4W	
R427	1-249-436-11	CARBON	39K	5%	1/4W	
R428	1-249-429-11	CARBON	10K	5%	1/4W	
R429	1-249-429-11	CARBON	10K	5%	1/4W	
R430	1-249-430-11	CARBON	12K	5%	1/4W	
R431	1-249-431-11	CARBON	15K	5%	1/4W	
R432	1-249-429-11	CARBON	10K	5%	1/4W	
R433	1-249-433-11	CARBON	22K	5%	1/4W	
R434	1-249-433-11	CARBON	22K	5%	1/4W	
R435	1-249-437-11	CARBON	47K	5%	1/4W	
R436	1-249-433-11	CARBON	22K	5%	1/4W	
R437	1-249-437-11	CARBON	47K	5%	1/4W	
R441	1-247-895-00	CARBON	470K	5%	1/4W	
R442	1-249-429-11	CARBON	10K	5%	1/4W	
R443	1-249-441-11	CARBON	100K	5%	1/4W	
R444	1-249-441-11	CARBON	100K	5%	1/4W	
R448	1-249-417-11	CARBON	1K	5%	1/4W	
R449	1-247-885-00	CARBON	180K	5%	1/4W	
R450	1-249-417-11	CARBON	1K	5%	1/4W	
R452	1-249-425-11	CARBON	4.7K	5%	1/4W	
R453	1-249-429-11	CARBON	10K	5%	1/4W	
R454	1-249-415-11	CARBON	680	5%	1/4W	
R463	1-249-423-11	CARBON	3.3K	5%	1/4W	
R465	1-249-423-11	CARBON	3.3K	5%	1/4W	
R466	1-247-885-00	CARBON	180K	5%	1/4W	
R467	1-249-430-11	CARBON	12K	5%	1/4W	
R468	1-249-431-11	CARBON	15K	5%	1/4W	
R470	1-249-415-11	CARBON	680	5%	1/4W	
R488	1-249-417-11	CARBON	1K	5%	1/4W	
R490	1-249-429-11	CARBON	10K	5%	1/4W	
R491	1-249-419-11	CARBON	1.5K	5%	1/4W	
R496	1-249-435-11	CARBON	33K	5%	1/4W	
R497	1-249-429-11	CARBON	10K	5%	1/4W	
R499	1-217-587-00	RES, SHORT	0.01			
R502	⚠ 1-249-385-11	CARBON	2.2	5%	1/4W	F
R506	1-249-429-11	CARBON	10K	5%	1/4W	
R509	1-249-417-11	CARBON	1K	5%	1/4W	
R510	1-249-417-11	CARBON	1K	5%	1/4W	
R511	1-249-417-11	CARBON	1K	5%	1/4W	
R512	1-249-429-11	CARBON	10K	5%	1/4W	
R513	1-247-705-11	CARBON	270	5%	1/4W	
R514	1-249-417-11	CARBON	1K	5%	1/4W	
R515	1-249-417-11	CARBON	1K	5%	1/4W	
R516	1-249-429-11	CARBON	10K	5%	1/4W	
R517	1-249-437-11	CARBON	47K	5%	1/4W	
R518	1-249-425-11	CARBON	4.7K	5%	1/4W	
R519	1-249-425-11	CARBON	4.7K	5%	1/4W	
R521	1-249-429-11	CARBON	10K	5%	1/4W	
R522	1-249-429-11	CARBON	10K	5%	1/4W	
R523	1-249-429-11	CARBON	10K	5%	1/4W	
R524	1-249-428-11	CARBON	8.2K	5%	1/4W	

Ref.No	Part No.	Description				Remark
R526	1-249-437-11	CARBON	47K	5%	1/4W	
R527	1-249-431-11	CARBON	15K	5%	1/4W	
R528	1-249-419-11	CARBON	1.5K	5%	1/4W	
R529	1-249-418-11	CARBON	1.2K	5%	1/4W	
R530	1-249-417-11	CARBON	1K	5%	1/4W	
R531	1-249-417-11	CARBON	1K	5%	1/4W	
R532	1-249-421-11	CARBON	2.2K	5%	1/4W	
R533	1-247-897-11	CARBON	560K	5%	1/4W	
R534	1-249-428-11	CARBON	8.2K	5%	1/4W	
R535	1-249-410-11	CARBON	270	5%	1/4W	
R536	1-249-421-11	CARBON	2.2K	5%	1/4W	
R537	1-249-437-11	CARBON	47K	5%	1/4W	
R538	1-249-427-11	CARBON	6.8K	5%	1/4W	
R539	1-249-417-11	CARBON	1K	5%	1/4W	
R540	1-249-435-11	CARBON	33K	5%	1/4W	
R541	1-249-429-11	CARBON	10K	5%	1/4W	
R542	1-249-432-11	CARBON	18K	5%	1/4W	
R543	1-249-401-11	CARBON	47	5%	1/4W	
R548	1-249-429-11	CARBON	10K	5%	1/4W	
R552	1-249-429-11	CARBON	10K	5%	1/4W	
R553	1-249-417-11	CARBON	1K	5%	1/4W	
R555	1-249-441-11	CARBON	100K	5%	1/4W	
R556	1-249-437-11	CARBON	47K	5%	1/4W	
R557	1-249-437-11	CARBON	47K	5%	1/4W	
R558	1-249-437-11	CARBON	47K	5%	1/4W	
R561	1-249-437-11	CARBON	47K	5%	1/4W	
R562	1-249-437-11	CARBON	47K	5%	1/4W	
R563	1-249-437-11	CARBON	47K	5%	1/4W	
R564	1-249-437-11	CARBON	47K	5%	1/4W	
R565	1-249-437-11	CARBON	47K	5%	1/4W	
R566	1-249-437-11	CARBON	47K	5%	1/4W	
R567	1-249-437-11	CARBON	47K	5%	1/4W	
R568	1-249-437-11	CARBON	47K	5%	1/4W	
R572	1-249-405-11	CARBON	100	5%	1/4W	
R573	1-249-427-11	CARBON	6.8K	5%	1/4W	
R574	1-247-903-00	CARBON	1M	5%	1/4W	
R582	1-247-891-00	CARBON	330K	5%	1/4W	
R583	1-247-887-00	CARBON	220K	5%	1/4W	
R589	1-249-421-11	CARBON	2.2K	5%	1/4W	
R590	⚠ 1-249-385-11	CARBON	2.2	5%	1/4W	F
R591	1-249-422-11	CARBON	2.7K	5%	1/4W	
R595	1-249-429-11	CARBON	10K	5%	1/4W	
R596	1-249-429-11	CARBON	10K	5%	1/4W	
R598	1-249-413-11	CARBON	470	5%	1/4W	
R599	1-249-437-11	CARBON	47K	5%	1/4W	
R751	1-249-414-11	CARBON	560	5%	1/4W	
R752	1-249-423-11	CARBON	3.3K	5%	1/4W	
R801	1-249-425-11	CARBON	4.7K	5%	1/4W	
R802	1-249-425-11	CARBON	4.7K	5%	1/4W	
R803	1-249-425-11	CARBON	4.7K	5%	1/4W	
R804	1-249-425-11	CARBON	4.7K	5%	1/4W	
R805	1-249-425-11	CARBON	4.7K	5%	1/4W	
R806	1-249-425-11	CARBON	4.7K	5%	1/4W	
R808	1-249-441-11	CARBON	100K	5%	1/4W	
R810	1-249-435-11	CARBON	33K	5%	1/4W	
R813	1-249-432-11	CARBON	18K	5%	1/4W	
R814	1-249-441-11	CARBON	100K	5%	1/4W	
R815	1-249-437-11	CARBON	47K	5%	1/4W	
R816	1-249-437-11	CARBON	47K	5%	1/4W	
R817	1-249-437-11	CARBON	47K	5%	1/4W	
R818	1-249-435-11	CARBON	33K	5%	1/4W	
R819	1-249-434-11	CARBON	27K	5%	1/4W	
R820	1-249-427-11	CARBON	6.8K	5%	1/4W	
R821	1-249-430-11	CARBON	12K	5%	1/4W	
R822	1-249-417-11	CARBON	1K	5%	1/4W	

When indicating parts by reference number, please include the board name.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description			Remark
R824	1-247-883-00	CARBON	150K	5%	1/4W
R825	1-249-413-11	CARBON	470	5%	1/4W
R826	1-249-419-11	CARBON	1.5K	5%	1/4W
R827	1-247-903-00	CARBON	1M	5%	1/4W
R828	1-249-419-11	CARBON	1.5K	5%	1/4W
R829	1-249-422-11	CARBON	2.7K	5%	1/4W
R830	1-249-429-11	CARBON	10K	5%	1/4W
R831	1-249-435-11	CARBON	33K	5%	1/4W
R837	1-249-417-11	CARBON	1K	5%	1/4W
R838	1-249-417-11	CARBON	1K	5%	1/4W
R839	1-249-437-11	CARBON	47K	5%	1/4W
R840	1-249-405-11	CARBON	100	5%	1/4W
R841	1-249-417-11	CARBON	1K	5%	1/4W
R843	1-249-428-11	CARBON	8.2K	5%	1/4W
R844	1-249-433-11	CARBON	22K	5%	1/4W
R845	1-249-433-11	CARBON	22K	5%	1/4W
R851	1-249-437-11	CARBON	47K	5%	1/4W
R852	1-249-437-11	CARBON	47K	5%	1/4W
R853	1-249-437-11	CARBON	47K	5%	1/4W
R854	1-249-437-11	CARBON	47K	5%	1/4W
R855	1-249-437-11	CARBON	47K	5%	1/4W
R856	1-249-437-11	CARBON	47K	5%	1/4W
R857	1-249-424-11	CARBON	3.9K	5%	1/4W
R858	1-249-417-11	CARBON	1K	5%	1/4W
R859	1-249-441-11	CARBON	100K	5%	1/4W
R863	1-249-441-11	CARBON	100K	5%	1/4W
R901	1-249-417-11	CARBON	1K	5%	1/4W
R903	1-247-887-00	CARBON	220K	5%	1/4W

VARIABLE RESISTOR

RV251	1-228-998-00	RES, ADJ, CARBON 220K
RV501	1-228-994-00	RES, ADJ, CARBON 10K

TRANSFORMER

T251	1-433-352-11	TRANSFORMER, BIAS OSCILLATION
T252	1-406-349-11	TRANSFORMER, OSCILLATION

CRYSTAL

X501	1-578-774-11	VIBRATOR, CRYSTAL
X503	1-577-358-21	VIBRATOR, CERAMIC

* *

*1-635-225-11 SI-10 BOARD (Ref. No. 4000 series)

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CAPACITOR

C847	1-162-306-11	CERAMIC	0.01MF	20%	16V
C848	1-162-306-11	CERAMIC	0.01MF	20%	16V

CONNECTOR

CN801	1-569-761-11	CONNECTOR, BOARD TO BOATD 20P

IC

IC810	8-759-602-49	IC M5201P
IC811	8-759-923-90	IC BA4560
IC812	8-759-040-70	IC MC14070BCP

RESISTOR

R860	1-249-435-11	CARBON	33K	5%	1/4W
R861	1-249-435-11	CARBON	33K	5%	1/4W
R862	1-249-432-11	CARBON	18K	5%	1/4W

* *

When indicating parts by reference number, please include the board name.

Ref.No Part No. Description Remark

*A-6721-334-A TU-120 BOARD, COMPLETE (Ref. No. 2000 series)

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CAPACITOR

Ref.No	Part No.	Description			Remark
C001	1-124-477-11	ELECT	47MF	20%	16V
C002	1-124-927-11	ELECT	4.7MF	20%	50V
C003	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C004	1-126-233-11	ELECT	22MF	20%	50V
C005	1-126-103-11	ELECT	470MF	20%	16V
C006	1-124-927-11	ELECT	4.7MF	20%	50V
C008	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C009	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C010	1-124-477-11	ELECT	47MF	20%	16V
C011	1-124-477-11	ELECT	47MF	20%	16V
C012	1-163-016-00	CERAMIC CHIP	0.0039MF	10%	50V
C013	1-124-477-11	ELECT	47MF	20%	16V
C014	1-163-016-00	CERAMIC CHIP	0.0039MF	10%	50V
C015	1-123-875-11	ELECT	10MF	20%	50V
C016	1-123-875-11	ELECT	10MF	20%	50V
C017	1-123-875-11	ELECT	10MF	20%	50V
C018	1-124-477-11	ELECT	47MF	20%	16V
C019	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C101	1-163-001-11	CERAMIC CHIP	220PF	10%	50V

CONNECTOR

CN001	1-568-074-11	CONNECTOR (RECEPTALE) 10P
CN002	1-568-075-11	CONNECTOR (RECEPTALE) 12P

DIODE

D001	8-719-110-78	DIODE RD33ES-B2
D002	8-719-400-18	DIODE MA152WK
D003	8-719-400-18	DIODE MA152WK

IF BLOCLK

IF001	⚠1-466-318-11	IF BLOCK (IFY-450C)

COIL

L001	1-408-421-00	INDUCTOR	100UH
L002	1-408-413-00	INDUCTOR	22UH
L003	1-408-409-00	INDUCTOR	10UH
L004	1-408-409-00	INDUCTOR	10UH
L005	1-408-409-00	INDUCTOR	10UH

DECODER

MPX001	⚠1-466-072-11	DECODER BLOCK, MULTIPLE SOUND

TRANSISTOR

Q001	8-729-901-78	TRANSISTOR 2SC2412K-R
Q003	8-729-901-78	TRANSISTOR 2SC2412K-R
Q005	8-729-901-78	TRANSISTOR 2SC2412K-R
Q006	8-729-900-53	TRANSISTOR DTC114EK

RESISTOR

R002	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R004	1-216-025-00	METAL GLAZE	100	5%	1/10W
R005	1-216-025-00	METAL GLAZE	100	5%	1/10W
R006	1-216-025-00	METAL GLAZE	100	5%	1/10W
R007	1-216-025-00	METAL GLAZE	100	5%	1/10W
R008	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R009	1-216-043-00	METAL GLAZE	560	5%	1/10W
R010	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R011	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R012	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R013	1-216-093-00	METAL GLAZE	68K	5%	1/10W

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description	Remark
R014	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R015	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R016	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R017	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R021	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R023	1-216-081-00	METAL GLAZE 22K 5% 1/10W	

VARIABLE RESISTOR

RV001	1-238-016-11	RES, ADJ, CARBON 10K	

TUNER

TU001	⚠1-465-239-11	TUNER, ET	

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*A-6725-882-A MF-94 BOARD, COMPLETE (Ref. No. 2000 series)
* * * * * * * * * * * * * * *
(Including the RM-43 BOARD)

	*3-682-419-71	HOLDER, P.C.B	
	*3-744-053-01	HOLDER, FL	

BUZZER

BZ201	1-529-080-11	BUZZER, PIEZOELECTRIC	

CAPACITOR

C202	1-163-113-00	CERAMIC CHIP 68PF 5% 50V	
C203	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C204	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C205	1-162-847-11	CERAMIC 0.047MF 10% 16V	
C206	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C207	1-125-486-11	ELECT 0.22MF 5.5V	
C208	1-126-157-11	ELECT 10MF 20% 16V	
C209	1-126-154-11	ELECT 47MF 20% 6.3V	
C210	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C211	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C212	1-126-096-11	ELECT 10MF 20% 35V	
C213	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C214	1-124-589-11	ELECT 47MF 20% 16V	
C215	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C218	1-126-094-11	ELECT 4.7MF 20% 16V	
C219	1-126-094-11	ELECT 4.7MF 20% 16V	
C220	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C221	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C222	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C223	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C224	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C225	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C226	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C230	1-126-160-11	ELECT 1MF 20% 50V	
C231	1-126-160-11	ELECT 1MF 20% 50V	
C232	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C233	1-124-472-11	ELECT 470MF 20% 6.3V	
C234	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	

CONNECTOR

CN201	1-569-814-11	CONNECTOR, BOARD TO BOARD 21P	
CN202	1-568-080-11	CONNECTOR (RECEPTALE) 22P	
CN203	1-568-079-11	CONNECTOR (RECEPTALE) 20P	
CN204	*1-569-813-11	PIN, CONNECTOR (PC BOARD) 5P	
CN205	1-569-667-11	CONNECTOR, BOARD TO BOARD 8P	
CN207	1-506-468-11	PIN, CONNECTOR 3P	
CN208	*1-569-813-11	PIN, CONNECTOR (PC BOARD) 5P	

Ref.No	Part No.	Description	Remark

VARIABLE CAPACITOR

CV201	1-141-291-11	CAP, TRIMMER	

DIODE

D201	8-719-400-18	DIODE MA152WK	
D202	8-719-911-19	DIODE 1SS119	
D203	8-719-400-18	DIODE MA152WK	
D204	8-719-911-19	DIODE 1SS119	
D206	8-719-104-34	DIODE 1S2836	
D208	8-719-105-82	DIODE RD5.1M-B2	
D209	8-719-106-08	DIODE RD6.2M-B2	
D211	8-719-400-18	DIODE MA152WK	
D212	8-719-400-18	DIODE MA152WK	
D216	8-719-400-18	DIODE MA152WK	
D217	8-719-400-18	DIODE MA152WK	
D218	8-719-400-18	DIODE MA152WK	
D219	8-719-106-08	DIODE RD6.2M-B2	

IC

IC201	⚠8-759-504-13	IC MB89794B-109	
IC202	8-759-977-88	IC CAT59C11P	
IC203	8-759-502-50	IC S-8053HNB	
IC204	8-759-947-53	IC S-8054ALR	
IC205	⚠8-759-961-38	IC BA6138	

RESISTOR

JR001	1-216-295-00	METAL GLAZE 0 5% 1/10W	

COIL

L201	1-408-422-00	INDUCTOR 120UH	
L203	1-410-336-11	INDUCTOR 220UH	
L204	1-410-517-11	INDUCTOR 47UH	
L205	1-410-501-11	INDUCTOR 2.2UH	
L206	1-410-501-11	INDUCTOR 2.2UH	
L207	1-410-501-11	INDUCTOR 2.2UH	
L209	1-410-361-21	INDUCTOR 12UH	
L210	1-410-501-11	INDUCTOR 2.2UH	
L211	1-410-501-11	INDUCTOR 2.2UH	
L212	1-410-501-11	INDUCTOR 2.2UH	
L213	1-410-501-11	INDUCTOR 2.2UH	
L214	1-410-501-11	INDUCTOR 2.2UH	
L215	1-410-501-11	INDUCTOR 2.2UH	
L216	1-410-501-11	INDUCTOR 2.2UH	
L221	1-410-502-21	INDUCTOR 2.7UH	
L222	1-410-502-21	INDUCTOR 2.7UH	
L223	1-410-502-21	INDUCTOR 2.7UH	
L225	1-410-502-21	INDUCTOR 2.7UH	
L226	1-410-502-21	INDUCTOR 2.7UH	
L227	1-410-502-21	INDUCTOR 2.7UH	

INDICATOR TUBE

ND201	1-519-598-21	INDICATOR TUBE, FLUORESCENT	

TRANSISTOR

Q201	8-729-271-23	TRANSISTOR 2SC2712	
Q202	8-729-271-23	TRANSISTOR 2SC2712	
Q203	8-729-271-23	TRANSISTOR 2SC2712	
Q204	8-729-271-23	TRANSISTOR 2SC2712	
Q205	8-729-901-01	TRANSISTOR DTC144EK	
Q206	8-729-901-01	TRANSISTOR DTC144EK	

RESISTOR

R201	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R202	1-216-081-00	METAL GLAZE 22K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description			Remark
R203	1-216-017-00	METAL GLAZE	47	5%	1/10W
R204	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R205	1-216-025-00	METAL GLAZE	100	5%	1/10W
R207	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R208	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R209	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R210	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R211	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R212	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R213	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R214	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R215	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R216	1-216-037-00	METAL GLAZE	330	5%	1/10W
R217	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R218	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R219	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R220	1-216-035-00	METAL GLAZE	270	5%	1/10W
R221	1-216-035-00	METAL GLAZE	270	5%	1/10W
R222	1-216-035-00	METAL GLAZE	270	5%	1/10W
R223	1-216-035-00	METAL GLAZE	270	5%	1/10W
R224	1-216-035-00	METAL GLAZE	270	5%	1/10W
R225	1-216-035-00	METAL GLAZE	270	5%	1/10W
R226	1-216-035-00	METAL GLAZE	270	5%	1/10W
R227	1-216-035-00	METAL GLAZE	270	5%	1/10W
R228	1-216-033-00	METAL GLAZE	220	5%	1/10W
R229	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R230	1-216-033-00	METAL GLAZE	220	5%	1/10W
R231	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R242	1-216-037-00	METAL GLAZE	330	5%	1/10W
R243	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R244	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R245	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R246	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R247	1-216-033-00	METAL GLAZE	220	5%	1/10W
R248	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R249	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R250	1-216-186-00	METAL GLAZE	330	5%	1/8W
R251	1-216-037-00	METAL GLAZE	330	5%	1/10W
R252	1-216-037-00	METAL GLAZE	330	5%	1/10W
R253	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R254	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R255	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R256	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R301	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R302	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R303	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R304	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R305	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R306	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R307	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R308	1-216-073-00	METAL GLAZE	10K	5%	1/10W

VARIABLE RESISTOR

RV201	1-238-016-11	RES, ADJ, CARBON 10K
RV202	1-238-016-11	RES, ADJ, CARBON 10K

SWITCH

S201	1-570-865-11	SWITCH, SLIDE

CRYSTAL

X201	1-567-098-00	VIBRATOR, CRYSTAL
X202	1-567-132-00	VIBLATOR, CERAMIC

* * *

Ref.No	Part No.	Description	Remark
	*1-635-215-11	RM-43 BOARD *********	(Ref. No. 4000 series)

CONNECTOR

CN601	*1-565-042-11	HOUSING, CONNECTOR(PC BOARD)5P
CN602	*1-565-042-11	HOUSING, CONNECTOR(PC BOARD)5P

DIODE

D601	8-719-955-04	DIODE PY5504S-1
D602	8-719-940-82	DIODE SLR-34MC3
D604	8-719-940-99	DIODE SLR-34VC3
D605	8-719-940-99	DIODE SLR-34VC3
D606	8-719-940-82	DIODE SLR-34MC3

IC

IC601	1-466-131-21	CATCHER RAY BLOCK (GP1U52X)

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	*A-6725-883-A	MF-101 BOARD, COMPLETE *****************	(Ref. No. 3000 series)
	*3-744-056-01	COVER, LED	
	*3-749-306-01	PLATE, GROUND, MF	

CAPACITOR

C109	1-161-379-00	CERAMIC	0.01MF	30%	16V
C111	1-161-379-00	CERAMIC	0.01MF	30%	16V
C112	1-162-286-31	CERAMIC	220PF	10%	50V
C113	1-126-157-11	ELECT	10MF	20%	10V

JACK

CN101	1-569-669-11	CONNECTOR, BOARD TO BOARD 16P
CN102	1-569-815-11	CONNECTOR, BOARD TO BOARD 21P
CN103	1-506-483-21	PIN, CONNECTOR 4P
CN104	1-506-490-21	PIN, CONNECTOR 11P
CN105	1-506-485-11	PIN, CONNECTOR 6P

CONNECTOR

CNJ101	1-562-808-11	JACK
CNJ102	1-565-669-21	JACK, SMALL TYPE
CNJ103	1-569-578-11	TERMINAL, S (WITH SW)
CNJ104	1-565-735-21	JACK, PIN 3P
CNJ105	1-568-611-11	SOCKET, DIN (SMALL TYPE) 5P

COMBINATION PARTS

CP101	1-233-220-11	COMPOSITION CIRCUIT BLOCK

DIODE

D101	8-719-955-04	DIODE PY5504S-1
D102	8-719-955-04	DIODE PY5504S-1
D103	8-719-109-93	DIODE RD6.2ES-B2
D104	8-719-109-93	DIODE RD6.2ES-B2
D105	8-719-911-19	DIODE 1SS119
D107	8-719-109-93	DIODE RD6.2ES-B2
D108	8-719-946-30	DIODE SLR-34DC3
D109	8-719-109-93	DIODE RD6.2ES-B2
D110	8-719-946-30	DIODE SLR-34DC3

RESISTOR

R101	1-249-407-11	CARBON	150	5%	1/4W
R102	1-249-407-11	CARBON	150	5%	1/4W
R104	1-249-433-11	CARBON	22K	5%	1/4W
R106	1-249-421-11	CARBON	2.2K	5%	1/4W
R108	1-249-423-11	CARBON	3.3K	5%	1/4W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
R109	1-249-425-11	CARBON	4.7K	5%	1/4W
R110	1-249-429-11	CARBON	10K	5%	1/4W
R111	1-249-433-11	CARBON	22K	5%	1/4W
R114	1-249-427-11	CARBON	6.8K	5%	1/4W
R115	1-249-417-11	CARBON	1K	5%	1/4W
R116	1-249-438-11	CARBON	56K	5%	1/4W
R117	1-249-423-11	CARBON	3.3K	5%	1/4W
R118	1-249-433-11	CARBON	22K	5%	1/4W
R119	1-247-804-11	CARBON	75	5%	1/4W
R120	1-247-804-11	CARBON	75	5%	1/4W
R121	1-247-804-11	CARBON	75	5%	1/4W
R124	1-249-426-11	CARBON	5.6K	5%	1/4W
R125	1-249-429-11	CARBON	10K	5%	1/4W
R126	1-249-426-11	CARBON	5.6K	5%	1/4W
R127	1-249-429-11	CARBON	10K	5%	1/4W

VARIABLE RESISTOR

RV101	1-238-420-11	RES, VAR, CARBON 10K
RV102	1-241-061-11	RES, VAR, CARBON 2K
RV103	1-241-062-11	RES, VAR, CARBON 20K
RV104	1-241-062-11	RES, VAR, CARBON 20K

SWITCH

S101	1-571-977-11	SWITCH, TACTIL (POWER)
S102	1-571-977-11	SWITCH, TACTIL (EJECT)
S103	1-571-977-11	SWITCH, TACTIL (EDITMONITOR)
S104	1-571-977-11	SWITCH, TACTIL (SYNCRO EDIT)
S105	1-570-854-11	SWITCH, SLIDE (COMMAND MODE)

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*A-6727-219-A RP-76 BOARD, COMPLETE (Ref. No. 7000 series)

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CAPACITOR

Ref.No	Part No.	Description			Remark
C101	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C102	1-124-229-00	ELECT	33MF	20%	10V
C103	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C104	1-124-438-00	ELECT	1MF	20%	50V
C106	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C107	1-162-638-11	CERAMIC CHIP	1MF		16V
C108	1-126-176-11	ELECT	220MF	20%	10V
C109	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C110	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C111	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C112	1-126-157-11	ELECT	10MF	20%	16V
C113	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C114	1-124-438-00	ELECT	1MF	20%	50V
C115	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C116	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C117	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C118	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C119	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C120	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C121	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C122	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C123	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C201	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C203	1-162-638-11	CERAMIC CHIP	1MF		16V
C204	1-162-638-11	CERAMIC CHIP	1MF		16V
C205	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C206	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C207	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C209	1-162-638-11	CERAMIC CHIP	1MF		16V
C210	1-162-638-11	CERAMIC CHIP	1MF		16V
C211	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C213	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C214	1-126-154-11	ELECT	47MF	20%	6.3V
C215	1-162-638-11	CERAMIC CHIP	1MF		16V
C216	1-162-638-11	CERAMIC CHIP	1MF		16V
C217	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C218	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C219	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C220	1-124-589-11	ELECT	47MF	20%	16V
C221	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C222	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C223	1-124-463-00	ELECT	0.1MF	20%	50V
C224	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C225	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C226	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C227	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V
C228	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C229	1-126-154-11	ELECT	47MF	20%	6.3V
C230	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C231	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C232	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C233	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C234	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C235	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C236	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C237	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C238	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C239	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C240	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C241	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C301	1-124-589-11	ELECT	47MF	20%	16V
C302	1-162-638-11	CERAMIC CHIP	1MF		16V
C303	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C304	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C305	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C306	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C307	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V

CONNECTOR

CN101	1-506-485-11	PIN, CONNECTOR 6P
CN201	1-565-759-11	CONNECTOR, BOARD TO BOARD 13P
CN202	1-506-491-11	PIN, CONNECTOR 12P
CN203	1-506-485-11	PIN, CONNECTOR 6P
CN204	*1-564-031-00	PIN, CONNECTOR 6P

DIODE

D101	8-719-400-18	DIODE MA152WK
D201	8-719-400-18	DIODE MA152WK
D203	8-719-400-18	DIODE MA152WK
D205	8-719-400-18	DIODE MA152WK
D206	8-719-400-18	DIODE MA152WK
D207	8-719-400-18	DIODE MA152WK

IC

IC101	8-759-320-55	IC HA12115MP
IC201	8-759-320-52	IC HA118019NT
IC202	8-759-420-60	IC AN6392L

RESISTOR

JR101	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR201	1-216-296-00	METAL GLAZE	0	5%	1/8W

COIL

L101	1-408-970-21	INDUCTOR	10UH
L102	1-407-169-XX	INDUCTOR	100UH
L201	1-410-379-21	INDUCTOR CHIP	6.8UH

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
L202	1-408-977-21	INDUCTOR	39UH		
L203	1-407-169-XX	INDUCTOR	100UH		
L204	1-407-169-XX	INDUCTOR	100UH		
L205	1-407-169-XX	INDUCTOR	100UH		
L206	1-408-948-00	INDUCTOR	220UH		
L301	1-408-989-21	INDUCTOR	470UH		
L302	1-408-968-21	INDUCTOR	6.8UH		

TRANSISTOR

Ref.No	Part No.	Description
Q101	8-729-216-22	TRANSISTOR 2SA1162
Q201	8-729-920-74	TRANSISTOR 2SC2412K-QR
Q202	8-729-920-74	TRANSISTOR 2SC2412K-QR
Q203	8-729-920-71	TRANSISTOR 2SA1037K-QR
Q204	8-729-901-01	TRANSISTOR DTC144EK
Q205	8-729-920-71	TRANSISTOR 2SA1037K-QR
Q206	8-729-901-01	TRANSISTOR DTC144EK
Q207	8-729-901-01	TRANSISTOR DTC144EK
Q209	8-729-920-71	TRANSISTOR 2SA1037K-QR
Q210	8-729-901-05	TRANSISTOR DTA124EK
Q211	8-729-901-01	TRANSISTOR DTC144EK
Q212	8-729-901-01	TRANSISTOR DTC144EK
Q213	8-729-901-01	TRANSISTOR DTC144EK
Q301	8-729-901-01	TRANSISTOR DTC144EK
Q302	8-729-920-71	TRANSISTOR 2SA1037K-QR
Q303	8-729-920-71	TRANSISTOR 2SA1037K-QR

RESISTOR

Ref.No	Part No.	Description			Remark
R101	1-216-019-00	METAL GLAZE	56	5%	1/10W
R102	1-216-001-00	METAL GLAZE	10	5%	1/10W
R103	1-216-011-00	METAL GLAZE	27	5%	1/10W
R104	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R105	1-216-304-11	METAL GLAZE	3.3	5%	1/10W
R106	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R107	1-216-304-11	METAL GLAZE	3.3	5%	1/10W
R108	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R111	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R201	1-216-025-00	METAL GLAZE	100	5%	1/10W
R202	1-216-021-00	METAL GLAZE	68	5%	1/10W
R203	1-216-019-00	METAL GLAZE	56	5%	1/10W
R204	1-216-021-00	METAL GLAZE	68	5%	1/10W
R205	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R206	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R207	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R208	1-216-045-00	METAL GLAZE	680	5%	1/10W
R209	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R210	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R211	1-216-045-00	METAL GLAZE	680	5%	1/10W
R212	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R213	1-216-035-00	METAL GLAZE	270	5%	1/10W
R214	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R216	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R217	1-216-013-00	METAL GLAZE	33	5%	1/10W
R218	1-216-027-00	METAL GLAZE	120	5%	1/10W
R219	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R220	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R221	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R222	1-216-043-00	METAL GLAZE	560	5%	1/10W
R223	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R224	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R225	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R226	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R227	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R228	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R229	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R230	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R231	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R232	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R233	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R234	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R237	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R238	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R239	1-216-025-00	METAL GLAZE	100	5%	1/10W
R240	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R301	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R302	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R303	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R304	1-216-045-00	METAL GLAZE	680	5%	1/10W
R305	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R306	1-216-025-00	METAL GLAZE	100	5%	1/10W
R308	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R309	1-216-089-00	METAL GLAZE	47K	5%	1/10W

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* A-6727-233-A YC-92 BOARD, COMPLETE (Ref. No. 8000 series)

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CAPACITOR

Ref.No	Part No.	Description			Remark
C101	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C102	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C103	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C104	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C105	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C106	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C107	1-163-124-00	CERAMIC CHIP	200PF	5%	50V
C108	1-124-234-00	ELECT	22MF	20%	10V
C109	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C110	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C111	1-124-257-00	ELECT	2.2MF	20%	50V
C112	1-126-163-11	ELECT	4.7MF	20%	50V
C113	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C114	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C115	1-124-442-00	ELECT	330MF	20%	6.3V
C116	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C117	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C118	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C119	1-124-589-11	ELECT	47MF	20%	10V
C120	1-124-257-00	ELECT	2.2MF	20%	50V
C122	1-126-163-11	ELECT	4.7MF	20%	50V
C123	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C124	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C125	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C126	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C127	1-124-257-00	ELECT	2.2MF	20%	50V
C128	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C129	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C130	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C131	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C132	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C133	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C134	1-130-470-00	MYLAR	820PF	5%	50V
C135	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C136	1-124-589-11	ELECT	47MF	20%	10V
C137	1-124-589-11	ELECT	47MF	20%	10V
C138	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C140	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C141	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C142	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C143	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C144	1-163-107-00	CERAMIC CHIP	39PF	5%	50V

When indicating parts by reference number, please include the board name.

YC-92

Ref.No	Part No.	Description			Remark
C145	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C146	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C147	1-163-096-00	CERAMIC CHIP	13PF	5%	50V
C148	1-124-589-11	ELECT	47MF	20%	10V
C149	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C150	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C151	1-124-589-11	ELECT	47MF	20%	10V
C152	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C153	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C154	1-124-589-11	ELECT	47MF	20%	10V
C155	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C156	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C157	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C158	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C160	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C161	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C162	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C170	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C171	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C172	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C175	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C201	1-124-589-11	ELECT	47MF	20%	10V
C202	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C203	1-124-589-11	ELECT	47MF	20%	10V
C204	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C205	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C206	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C207	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C208	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C209	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C210	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C211	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C212	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C213	1-124-589-11	ELECT	47MF	20%	10V
C214	1-126-163-11	ELECT	4.7MF	20%	50V
C215	1-126-163-11	ELECT	4.7MF	20%	50V
C216	1-124-472-11	ELECT	470MF	20%	6.3V
C217	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C218	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C219	1-124-589-11	ELECT	47MF	20%	10V
C220	1-124-589-11	ELECT	47MF	20%	10V
C221	1-124-589-11	ELECT	47MF	20%	10V
C222	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C226	1-124-589-11	ELECT	47MF	20%	10V
C227	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C230	1-124-589-11	ELECT	47MF	20%	10V
C231	1-126-163-11	ELECT	4.7MF	20%	50V
C232	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C233	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C234	1-124-589-11	ELECT	47MF	20%	10V
C701	1-124-589-11	ELECT	47MF	20%	10V
C703	1-124-589-11	ELECT	47MF	20%	10V
C705	1-124-589-11	ELECT	47MF	20%	10V
C706	1-124-589-11	ELECT	47MF	20%	10V
C724	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C725	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C743	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C744	1-124-589-11	ELECT	47MF	20%	10V
C750	1-124-589-11	ELECT	47MF	20%	10V
C751	1-124-589-11	ELECT	47MF	20%	10V
C752	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C753	1-126-163-11	ELECT	4.7MF	20%	50V
C754	1-124-584-00	ELECT	100MF	20%	10V
C755	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C756	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C757	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C758	1-124-234-00	ELECT	22MF	20%	10V
C759	1-126-163-11	ELECT	4.7MF	20%	50V
C760	1-126-163-11	ELECT	4.7MF	20%	50V
C761	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C762	1-124-589-11	ELECT	47MF	20%	10V
C773	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C801	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C804	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C816	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C820	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C901	1-124-589-11	ELECT	47MF	20%	16V
C902	1-124-589-11	ELECT	47MF	20%	10V
C903	1-124-589-11	ELECT	47MF	20%	10V
C910	1-124-589-11	ELECT	47MF	20%	10V
C911	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C912	1-124-589-11	ELECT	47MF	20%	10V

CONNECTOR

CN031	*1-580-051-11	SOCKET, CONNECTOR 20P
CN032	*1-580-051-11	SOCKET, CONNECTOR 20P
CN033	1-506-491-11	PIN, CONNECTOR 12P
CN034	1-569-762-11	CONNECTOR, BOARD TO BORTD 20P
CN035	1-569-762-11	CONNECTOR, BOARD TO BORTD 20P

DIODE

D101	8-719-400-18	DIODE MA152WK
D103	8-719-400-18	DIODE MA152WK
D104	8-719-400-18	DIODE MA152WK
D105	8-719-400-18	DIODE MA152WK
D201	8-719-400-18	DIODE MA152WK
D202	8-719-400-18	DIODE MA152WK
D770	8-719-400-18	DIODE MA152WK
D803	8-719-400-18	DIODE MA152WK

FILTER

FL101	1-236-911-11	FILTER, LOW PASS
FL201	1-236-716-11	FILTER, LOW PASS
FL202	1-415-677-11	DELAY LINE, LC

IC

IC101	8-759-420-64	IC AN3237FB
IC102	8-759-710-07	IC NJM2234M
IC201	8-759-710-07	IC NJM2234M
IC202	8-759-996-67	IC VC2031DP
IC702	8-759-710-07	IC NJM2234M
IC704	8-759-420-62	IC AN3916
IC806	8-759-009-11	IC MC14070BF

RESISTOR

JR008	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR010	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR016	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR101	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR102	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR103	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR104	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR105	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR106	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR107	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR108	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR109	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR110	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR111	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR112	1-216-295-00	METAL GLAZE	0	5%	1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
JR113	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR114	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR115	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR116	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR117	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR200	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR201	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR202	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR203	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR204	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR205	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR206	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR207	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR208	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR209	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR210	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR211	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR212	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR213	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR214	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR215	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR216	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR217	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR218	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR219	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR220	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR221	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR222	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR223	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR224	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR225	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR226	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR227	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR228	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR229	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR230	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR231	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR232	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR233	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR234	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR235	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR236	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR237	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR238	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR239	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR240	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR241	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR242	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR243	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR244	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR245	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR246	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR247	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR248	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR249	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR250	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR251	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR252	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR253	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR254	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR255	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR256	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR257	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR258	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR259	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR260	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR261	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR262	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR263	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR264	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR265	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR266	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR267	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR268	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR269	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR270	1-216-296-00	METAL GLAZE	0	5%	1/8W

COIL

L101	1-410-520-11	INDUCTOR	82UH
L102	1-410-521-11	INDUCTOR	100UH
L103	1-410-521-11	INDUCTOR	100UH
L105	1-410-516-11	INDUCTOR	39UH
L106	1-410-522-11	INDUCTOR	120UH
L107	1-410-512-11	INDUCTOR	18UH
L108	1-410-508-11	INDUCTOR	8.2UH
L109	1-407-169-XX	INDUCTOR	100UH
L110	1-407-169-XX	INDUCTOR	100UH
L111	1-410-335-11	INDUCTOR	150UH
L112	1-410-522-11	INDUCTOR	120UH
L114	1-410-516-11	INDUCTOR	39UH
L115	1-410-511-11	INDUCTOR	15UH
L116	1-410-516-11	INDUCTOR	39UH
L117	1-410-517-11	INDUCTOR	47UH
L202	1-407-169-XX	INDUCTOR	100UH
L701	1-407-169-XX	INDUCTOR	100UH
L773	1-410-520-11	INDUCTOR	82UH
L910	1-407-169-XX	INDUCTOR	100UH
L911	1-407-169-XX	INDUCTOR	100UH

TRANSISTOR

Q101	8-729-901-01	TRANSISTOR	DTC144EK
Q102	8-729-901-01	TRANSISTOR	DTC144EK
Q103	8-729-901-01	TRANSISTOR	DTC144EK
Q104	8-729-901-01	TRANSISTOR	DTC144EK
Q105	8-729-901-01	TRANSISTOR	DTC144EK
Q106	8-729-901-01	TRANSISTOR	DTC144EK
Q107	8-729-901-01	TRANSISTOR	DTC144EK
Q108	8-729-901-01	TRANSISTOR	DTC144EK
Q109	8-729-901-01	TRANSISTOR	DTC144EK
Q110	8-729-901-01	TRANSISTOR	DTC144EK
Q113	8-729-901-01	TRANSISTOR	DTC144EK
Q114	8-729-901-01	TRANSISTOR	DTC144EK
Q116	8-729-901-01	TRANSISTOR	DTC144EK
Q118	8-729-901-06	TRANSISTOR	DTA144EK
Q119	8-729-901-06	TRANSISTOR	DTA144EK
Q120	8-729-100-66	TRANSISTOR	2SC1623
Q121	8-729-100-66	TRANSISTOR	2SC1623
Q122	8-729-122-63	TRANSISTOR	2SA1226
Q123	8-729-216-22	TRANSISTOR	2SA1162
Q201	8-729-901-01	TRANSISTOR	DTC144EK
Q203	8-729-100-66	TRANSISTOR	2SC1623
Q204	8-729-100-66	TRANSISTOR	2SC1623
Q205	8-729-100-66	TRANSISTOR	2SC1623
Q206	8-729-216-22	TRANSISTOR	2SA1162
Q207	8-729-100-66	TRANSISTOR	2SC1623
Q701	8-729-100-66	TRANSISTOR	2SC1623
Q702	8-729-100-66	TRANSISTOR	2SC1623
Q703	8-729-100-66	TRANSISTOR	2SC1623
Q770	8-729-901-01	TRANSISTOR	DTC144EK
Q771	8-729-901-01	TRANSISTOR	DTC144EK

When indicating parts by reference number, please include the board name.

YC-92

Ref.No	Part No.	Description				Remark
Q773	8-729-901-01	TRANSISTOR DTC144EK				
Q774	8-729-100-66	TRANSISTOR 2SC1623				
Q801	8-729-216-22	TRANSISTOR 2SA1162				
Q803	8-729-900-53	TRANSISTOR DTC114EK				
Q804	8-729-301-98	TRANSISTOR 2SA1162				
Q901	8-729-901-01	TRANSISTOR DTC144EK				
Q920	8-729-216-22	TRANSISTOR 2SA812-T1M6				
		RESISTOR				
R101	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R102	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R103	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R104	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R105	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R106	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R107	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R108	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R109	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R110	1-216-038-00	METAL GLAZE	360	5%	1/10W	
R111	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R112	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R113	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R114	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R115	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R116	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R117	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R118	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R119	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R120	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R121	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R123	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R124	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R125	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R126	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R127	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R128	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R129	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R130	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R131	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R132	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R133	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R134	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R135	1-216-054-00	METAL GLAZE	1.6K	5%	1/10W	
R136	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R138	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R139	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R140	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R141	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R142	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R143	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R144	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R147	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R148	1-216-052-00	METAL GLAZE	1.3K	5%	1/10W	
R149	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R150	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R151	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R152	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R153	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R154	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R155	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R156	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R157	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R158	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R159	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R160	1-216-040-00	METAL GLAZE	430	5%	1/10W	
R161	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R162	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R163	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R164	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R165	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R166	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R168	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R169	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R171	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R172	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R173	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R174	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R175	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R180	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R181	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R183	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R185	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R186	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R187	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R190	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R191	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R192	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R195	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R202	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R203	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R204	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R205	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R207	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R208	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R209	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R210	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R211	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R212	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R213	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R214	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R215	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R216	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R217	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R218	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R220	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R221	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R222	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R223	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R224	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R225	1-216-054-00	METAL GLAZE	1.6K	5%	1/10W	
R226	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R227	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R228	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R229	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R232	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R235	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R250	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R251	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R252	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R253	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R254	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R255	1-216-074-00	METAL GLAZE	11K	5%	1/10W	
R256	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R257	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R258	1-216-040-00	METAL GLAZE	430	5%	1/10W	
R259	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R260	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R701	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R703	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R704	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
R705	1-216-035-00	METAL GLAZE	270	5%	1/10W
R706	1-216-043-00	METAL GLAZE	560	5%	1/10W
R710	1-216-052-00	METAL GLAZE	1.3K	5%	1/10W
R711	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R712	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R713	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R714	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R716	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R748	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R770	1-216-035-00	METAL GLAZE	270	5%	1/10W
R771	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R773	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R774	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R775	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R776	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R780	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R801	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R802	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R805	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R806	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R807	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R910	1-216-001-00	METAL GLAZE	10	5%	1/10W
R912	1-216-035-00	METAL GLAZE	270	5%	1/10W
R920	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R923	1-216-025-00	METAL GLAZE	100	5%	1/10W

VARIABLE RESISTOR

RV101	1-241-079-11	RES, ADJ, CARBON 4.7K
RV102	1-241-079-11	RES, ADJ, CARBON 4.7K
RV103	1-241-080-11	RES, ADJ, CARBON 10K
RV104	1-241-081-11	RES, ADJ, CARBON 22K
RV105	1-241-076-11	RES, ADJ, CARBON 1K
RV106	1-241-081-11	RES, ADJ, CARBON 22K
RV107	1-241-081-11	RES, ADJ, CARBON 22K
RV108	1-241-081-11	RES, ADJ, CARBON 22K
RV109	1-241-079-11	RES, ADJ, CARBON 4.7K
RV201	1-241-080-11	RES, ADJ, CARBON 10K
RV202	1-241-075-11	RES, ADJ, CARBON 470
RV701	1-241-083-11	RES, ADJ, CARBON 47K

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*A-6727-234-A YC-93 BOARD, COMPLETE (Ref. No. 3000 series)

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CAPACITOR

Ref.No	Part No.	Description			Remark
C001	1-124-589-11	ELECT	47MF	20%	10V
C003	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C004	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C005	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C006	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C007	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C008	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C009	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C010	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C011	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C012	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C013	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C014	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C015	1-162-638-11	CERAMIC CHIP	1MF		16V
C016	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C017	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C018	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C019	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C020	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C021	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C022	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C023	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C024	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C025	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C026	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C027	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C028	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C029	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C030	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C031	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C032	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C033	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C034	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C035	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C036	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C037	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C038	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C039	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C040	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C041	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C042	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C043	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C044	1-126-176-11	ELECT	220MF	20%	10V
C045	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C046	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C047	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C048	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C049	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C055	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C056	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C306	1-124-589-11	ELECT	47MF	20%	10V
C307	1-126-163-11	ELECT	4.7MF	20%	50V
C309	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C310	1-124-257-00	ELECT	2.2MF	20%	50V
C311	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C312	1-126-162-11	ELECT	3.3MF	20%	50V
C313	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C315	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C316	1-124-589-11	ELECT	47MF	20%	10V
C317	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C318	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C321	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C322	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C323	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C324	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C325	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C326	1-124-589-11	ELECT	47MF	20%	10V
C327	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C328	1-124-589-11	ELECT	47MF	20%	10V
C329	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C330	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C331	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C332	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C333	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C334	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C335	1-124-589-11	ELECT	47MF	20%	10V
C336	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C337	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C338	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C339	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C340	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C341	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C342	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C343	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C345	1-163-033-00	CERAMIC CHIP	0.022MF		50V

When indicating parts by reference number, please include the board name.

YC-93

Ref.No	Part No.	Description			Remark
C360	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C401	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C402	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C403	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C404	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C405	1-162-638-11	CERAMIC CHIP	1MF		16V
C420	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C501	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C502	1-124-584-00	ELECT	100MF	20%	10V
C503	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C504	1-124-465-00	ELECT	0.47MF	20%	50V
C505	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C506	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C507	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C509	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C510	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C511	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C512	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C514	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C515	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C516	1-124-463-00	ELECT	0.1MF	20%	50V
C517	1-130-497-00	MYLAR	0.15MF	5%	50V
C519	1-126-162-11	ELECT	3.3MF	20%	50V
C520	1-130-497-00	MYLAR	0.15MF	5%	50V
C521	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C522	1-124-442-00	ELECT	330MF	20%	6.3V
C523	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C524	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C525	1-163-083-00	CERAMIC CHIP	1PF	0.25PF	50V
C526	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C528	1-124-463-00	ELECT	0.1MF	20%	50V
C529	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C530	1-126-163-11	ELECT	4.7MF	20%	50V
C531	1-124-442-00	ELECT	330MF	20%	6.3V
C532	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C533	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C551	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C552	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C561	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C601	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C602	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C716	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C717	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C719	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C720	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C722	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C740	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C741	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C850	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C852	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C853	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C951	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C952	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C960	1-124-229-00	ELECT	33MF	20%	10V
C961	1-163-125-00	CERAMIC CHIP	220PF	5%	50V

CONNECTOR

Ref.No	Part No.	Description
CN040	1-569-761-11	CONNECTOR, BOARD TO BOATD 20P
CN041	1-569-761-11	CONNECTOR, BOARD TO BOATD 20P

VARIABLE CAPACITOR

Ref.No	Part No.	Description
CV001	1-141-227-00	CAP, CERAMIC TRIMMER
CV002	1-141-260-00	TRIMMER, CERAMIC
CV003	1-141-260-00	TRIMMER, CERAMIC
CV501	1-141-291-11	CAP, TRIMMER

DIODE

Ref.No	Part No.	Description
D001	8-719-400-18	DIODE MA152WK
D002	8-719-400-18	DIODE MA152WK
D003	8-719-400-18	DIODE MA152WK
D004	8-719-400-18	DIODE MA152WK
D303	8-719-400-18	DIODE MA152WK
D304	8-719-400-18	DIODE MA152WK
D305	8-719-400-18	DIODE MA152WK
D501	8-719-400-18	DIODE MA152WK
D850	8-719-400-18	DIODE MA152WK
D851	8-719-400-18	DIODE MA152WK

DELAY LINE

Ref.No	Part No.	Description
DL301	1-415-693-11	DELAY LINE
DL551	1-415-692-11	DELAY LINE

FILTER

Ref.No	Part No.	Description
FL001	1-415-559-11	DELAY LINE, LC
FL501	1-236-919-11	FILTER, BAND PASS
FL502	1-424-109-11	COIL, TANK

IC

Ref.No	Part No.	Description
IC301	8-759-420-63	IC AN3495K
IC303	8-752-330-16	IC CXL5005P
IC401	8-759-710-86	IC NJM2233BM
IC501	8-759-320-51	IC HA118027NT
IC703	8-759-710-07	IC NJM2234M

RESISTOR

Ref.No	Part No.	Description			Remark
JR300	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR301	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR302	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR303	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR304	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR305	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR306	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR308	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR309	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR310	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR311	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR312	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR313	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR314	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR315	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR316	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR317	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR400	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR401	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR402	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR403	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR404	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR405	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR406	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR407	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR408	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR409	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR410	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR411	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR412	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR413	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR414	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR415	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR416	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR417	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR418	1-216-296-00	METAL GLAZE	0	5%	1/8W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
JR419	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR420	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR421	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR422	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR423	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR424	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR425	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR426	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR427	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR428	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR429	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR430	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR431	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR433	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR435	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR436	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR437	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR438	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR439	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR440	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR441	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR442	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR443	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR444	1-216-296-00	METAL GLAZE	0	5%	1/8W	
JR445	1-216-296-00	METAL GLAZE	0	5%	1/8W	

COIL

Ref.No	Part No.	Description		Remark
L001	1-408-418-00	INDUCTOR	56UH	
L002	1-410-521-11	INDUCTOR	100UH	
L003	1-410-361-21	INDUCTOR	12UH	
L004	1-410-521-11	INDUCTOR	100UH	
L005	1-410-513-11	INDUCTOR	22UH	
L006	1-410-516-11	INDUCTOR	39UH	
L007	1-408-411-00	INDUCTOR	15UH	
L008	1-408-411-00	INDUCTOR	15UH	
L009	1-408-974-21	INDUCTOR	22UH	
L301	1-408-411-00	INDUCTOR	15UH	
L302	1-408-411-00	INDUCTOR	15UH	
L303	1-407-169-XX	INDUCTOR	100UH	
L304	1-407-169-XX	INDUCTOR	100UH	
L305	1-410-509-11	INDUCTOR	10UH	
L306	1-408-411-00	INDUCTOR	15UH	
L307	1-408-959-21	INDUCTOR	1.2UH	
L308	1-408-986-21	INDUCTOR	270UH	
L309	1-408-969-21	INDUCTOR	8.2UH	
L310	1-407-169-XX	INDUCTOR	100UH	
L501	1-408-976-21	INDUCTOR	33UH	
L503	1-410-435-21	INDUCTOR	220UH	
L504	1-410-437-11	INDUCTOR	330UH	
L505	1-408-419-00	INDUCTOR	68UH	
L551	1-408-411-00	INDUCTOR	15UH	
L552	1-408-411-00	INDUCTOR	15UH	
L561	1-408-948-00	INDUCTOR	220UH	
L602	1-410-316-11	INDUCTOR	1UH	
L801	1-407-169-XX	INDUCTOR	100UH	
L850	1-410-516-11	INDUCTOR	39UH	
L960	1-407-169-XX	INDUCTOR	100UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q001	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q002	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q003	8-729-216-22	TRANSISTOR 2SA1162	
Q004	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q005	8-729-216-22	TRANSISTOR 2SA1162	
Q006	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q007	8-729-801-46	TRANSISTOR 2SC3064	
Q008	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q009	8-729-801-46	TRANSISTOR 2SC3064	
Q010	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q011	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q012 ⚠	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q013	8-729-803-37	TRANSISTOR 2SA1237	
Q014 ⚠	8-729-801-46	TRANSISTOR 2SC3064	
Q015 ⚠	8-729-803-37	TRANSISTOR 2SA1237	
Q016	8-729-801-46	TRANSISTOR 2SC3064	
Q017 ⚠	8-729-216-22	TRANSISTOR 2SA1162	
Q018	8-729-801-46	TRANSISTOR 2SC3064	
Q019	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q020	8-729-801-46	TRANSISTOR 2SC3064	
Q021	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q022	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q023	8-729-216-22	TRANSISTOR 2SA1162	
Q024	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q025	8-729-216-22	TRANSISTOR 2SA1162	
Q026	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q027	8-729-216-22	TRANSISTOR 2SA1162	
Q028	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q029	8-729-216-22	TRANSISTOR 2SA1162	
Q030	8-729-216-22	TRANSISTOR 2SA1162	
Q031	8-729-801-46	TRANSISTOR 2SC3064	
Q032	8-729-801-46	TRANSISTOR 2SC3064	
Q033	8-729-801-46	TRANSISTOR 2SC3064	
Q034	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q035	8-729-216-22	TRANSISTOR 2SA1162	
Q036	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q304	8-729-901-01	TRANSISTOR DTC144EK	
Q305	8-729-271-23	TRANSISTOR 2SC2712	
Q306	8-729-216-22	TRANSISTOR 2SA1162	
Q307	8-729-271-23	TRANSISTOR 2SC2712	
Q308	8-729-216-22	TRANSISTOR 2SA1162	
Q309	8-729-216-22	TRANSISTOR 2SA1162	
Q310	8-729-271-23	TRANSISTOR 2SC2712	
Q311	8-729-271-23	TRANSISTOR 2SC2712	
Q401	8-729-271-23	TRANSISTOR 2SC2712	
Q402	8-729-271-23	TRANSISTOR 2SC2712	
Q403	8-729-271-23	TRANSISTOR 2SC2712	
Q501	8-729-271-23	TRANSISTOR 2SC2712	
Q502	8-729-901-01	TRANSISTOR DTC144EK	
Q503	8-729-216-22	TRANSISTOR 2SA1162G	
Q504	8-729-901-01	TRANSISTOR DTC144EK	
Q506	8-729-901-01	TRANSISTOR DTC144EK	
Q510	8-729-901-01	TRANSISTOR DTC144EK	
Q511	8-729-901-01	TRANSISTOR DTC144EK	
Q512	8-729-271-23	TRANSISTOR 2SC2712	
Q551	8-729-216-22	TRANSISTOR 2SA1162	
Q711	8-729-271-23	TRANSISTOR 2SC2712	
Q712	8-729-271-23	TRANSISTOR 2SC2712	
Q741	8-729-216-22	TRANSISTOR 2SA1162	
Q851	8-729-901-06	TRANSISTOR DTA144EK	
Q857	8-729-100-66	TRANSISTOR 2SC1623	
Q891	8-729-901-06	TRANSISTOR DTA144EK	

RESISTOR

Ref.No	Part No.	Description				Remark
R001	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R002	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R003	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R004	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R005	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R006	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R007	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R008	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R009	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

YC-93

Ref.No	Part No.	Description				Remark
R010	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R011	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R012	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R013	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R014	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R015	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R016	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R017	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R018	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R019	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R020	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R021	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R022	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R023	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R024	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R025	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R026	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R027	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R028	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R029	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R030	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R031	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R032	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R033	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R034	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R035	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R036	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R037	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R038	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R039	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R040	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R041	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R042	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R043	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R044	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R045	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R046	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R047	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R048	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R049	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R050	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R051	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R052	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R053	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R054	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R055	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R056	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R057	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R058	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R059	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R060	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R061	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R062	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R063	1-216-023-00	METAL GLAZE	82	5%	1/10W	
R064	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R065	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R066	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R067	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R068	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R069	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R070	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R071	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R072	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R073	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R074	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R075	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R076	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R077	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R078	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R079	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R080	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R081	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R082	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R083	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R084	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R085	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R086	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R087	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R088	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R089	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R090	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R091	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R092	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R093	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R094	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R095	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R096	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R097	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R098	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R099	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R315	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R316	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R318	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R319	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R320	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R321	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R322	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R323	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R324	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R325	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R326	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R327	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R328	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R329	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R330	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R331	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R332	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R333	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R334	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R335	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R336	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R337	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R338	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R339	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R340	1-216-030-00	METAL GLAZE	160	5%	1/10W	
R341	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R342	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R343	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R344	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R345	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R346	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R347	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R348	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R349	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R350	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R351	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R352	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R353	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R355	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R356	1-216-083-00	METAL GLAZE	27K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
R357	1-216-295-00	METAL GLAZE	0	5%	1/10W
R361	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R370	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R371	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R372	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R373	1-216-037-00	METAL GLAZE	330	5%	1/10W
R374	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R375	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R376	1-216-039-00	METAL GLAZE	390	5%	1/10W
R377	1-216-035-00	METAL GLAZE	270	5%	1/10W
R378	1-216-041-00	METAL GLAZE	470	5%	1/10W
R379	1-216-047-00	METAL GLAZE	820	5%	1/10W
R380	1-216-047-00	METAL GLAZE	820	5%	1/10W
R381	1-216-025-00	METAL GLAZE	100	5%	1/10W
R382	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R383	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R384	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R386	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R401	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R402	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R403	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R404	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R405	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R406	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R407	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R408	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R409	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R410	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R420	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R501	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R502	1-216-041-00	METAL GLAZE	470	5%	1/10W
R503	1-216-047-00	METAL GLAZE	820	5%	1/10W
R504	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R505	1-216-043-00	METAL GLAZE	560	5%	1/10W
R506	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R507	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R508	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R509	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R512	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R513	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R514	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R515	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R516	1-216-125-00	METAL GLAZE	1.5M	5%	1/10W
R517	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R518	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R519	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R520	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R523	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R524	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R525	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R527	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R528	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R529	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R535	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R536	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R537	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R538	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R539	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R540	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R550	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R551	1-216-041-00	METAL GLAZE	470	5%	1/10W
R552	1-216-039-00	METAL GLAZE	390	5%	1/10W
R553	1-216-033-00	METAL GLAZE	220	5%	1/10W
R554	1-216-030-00	METAL GLAZE	160	5%	1/10W
R732	1-216-295-00	METAL GLAZE	0	5%	1/10W

Ref.No	Part No.	Description			Remark
R735	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R736	1-216-037-00	METAL GLAZE	330	5%	1/10W
R737	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R738	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R739	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R741	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R745	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R760	1-216-041-00	METAL GLAZE	470	5%	1/10W
R859	1-216-025-00	METAL GLAZE	100	5%	1/10W
R860	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R861	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R862	1-216-043-00	METAL GLAZE	560	5%	1/10W
R951	1-216-025-00	METAL GLAZE	100	5%	1/10W
R961	1-216-033-00	METAL GLAZE	220	5%	1/10W

VARIABLE RESISTOR

RV001	1-241-075-11	RES, ADJ, CARBON 470
RV002	1-241-075-11	RES, ADJ, CARBON 470
RV003	1-241-075-11	RES, ADJ, CARBON 470
RV004	1-241-075-11	RES, ADJ, CARBON 470
RV301	1-241-081-11	RES, ADJ, CARBON 22K
RV302	1-241-075-11	RES, ADJ, CARBON 470
RV303	1-241-076-11	RES, ADJ, CARBON 1K
RV304	1-241-075-11	RES, ADJ, CARBON 470
RV501	1-241-076-11	RES, ADJ, CARBON 1K

CRYSTAL

X501	1-577-166-11	VIBRATOR, CRYSTAL

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*A-6727-235-A LR-10 BOARD, COMPLETE (Ref. No. 5000 series)

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	*3-744-084-01	CASE (MAIN), SHIELD, LC
	*3-744-085-01	CASE (MAIN), SHIELD, RF
	*3-744-086-01	CASE (UPPER LID), SHIELD, LC
	*3-744-087-01	CASE (UPPER LID), SHIELD, RF
	*3-744-088-01	CASE (BOTTOM LID), SHIELD, RF
	*3-744-089-01	CASE (BOTTOM LID), SHIELD, LC

CAPACITOR

C013	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C014	1-124-589-11	ELECT	47MF	20%	10V
C016	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C018	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C201	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C202	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C203	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C204	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C205	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C206	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C207	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C208	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C209	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C210	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C211	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C212	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C213	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C214	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C215	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C216	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C217	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C218	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C219	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C220	1-163-103-00	CERAMIC CHIP	27PF	5%	50V

When indicating parts by reference number, please include the board name.

LR-10

Ref.No	Part No.	Description			Remark
C221	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C222	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C223	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C224	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C225	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C226	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C227	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C228	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C229	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C230	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C231	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V
C232	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C233	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C234	1-124-464-11	ELECT	0.22MF	20%	50V
C235	1-126-163-11	ELECT	4.7MF	20%	50V
C236	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C237	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C240	1-124-589-11	ELECT	47MF	20%	10V
C241	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C250	1-124-589-11	ELECT	47MF	20%	10V
C270	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C280	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C501	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C502	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C503	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C504	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C505	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C507	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C508	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C509	1-124-499-11	ELECT	1MF	20%	50V
C510	1-124-290-00	ELECT	47MF	20%	10V
C511	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C551	1-124-589-11	ELECT	47MF	20%	10V
C552	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C553	1-124-589-11	ELECT	47MF	20%	10V
C554	1-124-589-11	ELECT	47MF	20%	10V
C555	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C556	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C557	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C558	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C559	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C560	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C566	1-124-499-11	ELECT	1MF	20%	50V
C567	1-124-290-00	ELECT	47MF	20%	10V
C569	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C601	1-124-589-11	ELECT	47MF	20%	10V
C602	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C603	1-124-589-11	ELECT	47MF	20%	10V
C604	1-124-589-11	ELECT	47MF	20%	10V
C605	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C606	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C607	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C608	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C610	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C651	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C652	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C653	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C654	1-124-589-11	ELECT	47MF	20%	10V
C655	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C656	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C657	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C658	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C659	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C661	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C662	1-164-232-11	CERAMIC CHIP	0.01MF		50V

Ref.No	Part No.	Description			Remark
C663	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C664	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C666	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C667	1-124-589-11	ELECT	47MF	20%	10V
C668	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C670	1-124-589-11	ELECT	47MF	20%	10V
C671	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C672	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C673	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C675	1-124-589-11	ELECT	47MF	20%	10V
C677	1-126-096-11	ELECT	10MF	20%	25V
C680	1-124-589-11	ELECT	47MF	20%	10V
C681	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C682	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C683	1-124-589-11	ELECT	47MF	20%	10V
C701	1-124-589-11	ELECT	47MF	20%	10V
C702	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C703	1-124-589-11	ELECT	47MF	20%	10V
C704	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C705	1-126-160-11	ELECT	1MF	20%	50V
C706	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C707	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C708	1-124-589-11	ELECT	47MF	20%	10V
C709	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C710	1-124-589-11	ELECT	47MF	20%	10V
C711	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C712	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C713	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C714	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C715	1-124-589-11	ELECT	47MF	20%	10V
C716	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C717	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C718	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C719	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C720	1-163-115-00	CERAMIC CHIP	82PF	5%	50V

CERAMIC FILTER

CF701	1-577-543-11	FILTER, CERAMIC

CONNECTOR

CN020	1-568-080-11	CONNECTOR (RECEPTALE) 22P
CN021	1-568-075-11	CONNECTOR (RECEPTALE) 12P

DIODE

D201	8-719-400-18	DIODE MA152WK
D202	8-719-400-18	DIODE MA152WK
D203	8-719-400-18	DIODE MA152WK
D205	8-719-400-18	DIODE MA152WK
D206	8-719-400-18	DIODE MA152WK
D208	8-719-400-18	DIODE MA152WK
D209	8-719-400-18	DIODE MA152WK
D210	8-719-400-18	DIODE MA152WK
D211	8-719-400-18	DIODE MA152WK

FERRITE BEAD RING

FB001	1-543-610-11	BEAD, FERRITE
FB002	1-543-610-11	BEAD, FERRITE
FB004	1-543-610-11	BEAD, FERRITE
FB005	1-543-610-11	BEAD, FERRITE
FB006	1-543-610-11	BEAD, FERRITE
FB007	1-543-610-11	BEAD, FERRITE
FB008	1-543-610-11	BEAD, FERRITE

FILTER

FL551	1-236-715-11	FILTER, LOW PASS

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
FL601	1-236-715-11	FILTER, LOW PASS	
FL651	1-236-717-11	FILTER, BAND PASS	
FL652	1-415-558-11	DELAY LINE, LC	

IC

IC651	8-752-039-13	IC CXA1413L	
IC652	8-759-800-81	IC LA7016	
IC653	8-759-800-81	IC LA7016	
IC701	8-759-420-68	IC MN3814	
IC702	8-759-420-68	IC MN3814	
IC703	8-759-420-78	IC MN3109	

COIL

L201	1-408-976-21	INDUCTOR	33UH	
L202	1-408-989-21	INDUCTOR	470UH	
L203	1-408-978-21	INDUCTOR	47UH	
L204	1-408-976-21	INDUCTOR	33UH	
L205	1-408-971-21	INDUCTOR	12UH	
L206	1-408-977-21	INDUCTOR	39UH	
L207	1-408-948-00	INDUCTOR	220UH	
L208	1-408-970-21	INDUCTOR	10UH	
L209	1-408-978-21	INDUCTOR	47UH	
L210	1-408-973-21	INDUCTOR	18UH	
L211	1-408-978-21	INDUCTOR	47UH	
L212	1-408-974-21	INDUCTOR	22UH	
L213	1-408-969-21	INDUCTOR	8.2UH	
L214	1-408-983-21	INDUCTOR	120UH	
L215	1-408-988-21	INDUCTOR	390UH	
L250	1-407-169-XX	INDUCTOR	100UH	
L270	1-408-948-00	INDUCTOR	220UH	
L501	1-408-411-00	INDUCTOR	15UH	
L502	1-408-409-00	INDUCTOR	10UH	
L552	1-408-411-00	INDUCTOR	15UH	
L553	1-408-409-00	INDUCTOR	10UH	
L654	1-408-421-00	INDUCTOR	100UH	
L655	1-408-417-00	INDUCTOR	47UH	
L701	1-407-169-XX	INDUCTOR	100UH	
L702	1-407-169-XX	INDUCTOR	100UH	
L703	1-407-169-XX	INDUCTOR	100UH	
L704	1-407-169-XX	INDUCTOR	100UH	
L705	1-407-169-XX	INDUCTOR	100UH	
L706	1-408-973-21	INDUCTOR	18UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q007	8-729-216-22	TRANSISTOR 2SA1162	
Q008	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q010	8-729-216-22	TRANSISTOR 2SA1162	
Q201	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q202	8-729-901-06	TRANSISTOR DTA144EK	
Q203	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q204	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q205	8-729-901-06	TRANSISTOR DTA144EK	
Q206	8-729-901-06	TRANSISTOR DTA144EK	
Q207	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q208	8-729-901-05	TRANSISTOR DTA124EK	
Q209	8-729-900-53	TRANSISTOR DTC114EK	
Q210	8-729-901-05	TRANSISTOR DTA124EK	
Q211	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q212	8-729-216-22	TRANSISTOR 2SA1162	
Q213	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q214	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q215	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q216	8-729-216-22	TRANSISTOR 2SA1162	
Q217	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q218	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q219	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q220	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q221	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q222	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q223	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q224	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q225	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q226	8-729-216-22	TRANSISTOR 2SA1162	
Q280	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q281	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q501	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q502	8-729-216-22	TRANSISTOR 2SA1162	
Q503	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q504	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q506	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q551	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q552	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q553	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q554	8-729-216-22	TRANSISTOR 2SA1162	
Q555	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q556	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q601	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q602	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q603	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q604	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q605	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q607	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q652	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q653	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q654	8-729-216-22	TRANSISTOR 2SA1162	
Q655	8-729-216-22	TRANSISTOR 2SA1162	
Q656	8-729-216-22	TRANSISTOR 2SA1162	
Q657	8-729-901-01	TRANSISTOR DTC144EK	
Q670	8-729-102-08	TRANSISTOR 2SC2223-F14	
Q671	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q672	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q673	8-729-901-78	TRANSISTOR 2SC2412K-R	
Q701	8-729-216-22	TRANSISTOR 2SA1037K-R	

RESISTOR

R015	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R016	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R017	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R018	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R019	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R020	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R022	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R029	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R030	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R200	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R201	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R202	1-216-042-00	METAL GLAZE	510	5%	1/10W	
R203	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R204	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R205	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R206	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R207	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R208	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R209	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R210	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R211	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R212	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R213	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R214	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R215	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

When indicating parts by reference number, please include the board name.

LR-10

Ref.No	Part No.	Description			Remark
R216	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R217	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R218	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R219	1-216-043-00	METAL GLAZE	560	5%	1/10W
R220	1-216-043-00	METAL GLAZE	560	5%	1/10W
R221	1-216-054-00	METAL GLAZE	1.6K	5%	1/10W
R222	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R223	1-216-045-00	METAL GLAZE	680	5%	1/10W
R224	1-216-041-00	METAL GLAZE	470	5%	1/10W
R225	1-216-047-00	METAL GLAZE	820	5%	1/10W
R226	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R227	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R228	1-216-047-00	METAL GLAZE	820	5%	1/10W
R229	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R230	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R231	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R232	1-216-041-00	METAL GLAZE	470	5%	1/10W
R233	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R234	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R235	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R236	1-216-043-00	METAL GLAZE	560	5%	1/10W
R237	1-216-047-00	METAL GLAZE	820	5%	1/10W
R238	1-216-048-00	METAL GLAZE	910	5%	1/10W
R239	1-216-043-00	METAL GLAZE	560	5%	1/10W
R240	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R241	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R242	1-216-045-00	METAL GLAZE	680	5%	1/10W
R243	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R244	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R245	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R246	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R247	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R248	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R249	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R250	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R251	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R252	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R253	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R254	1-216-038-00	METAL GLAZE	360	5%	1/10W
R255	1-216-043-00	METAL GLAZE	560	5%	1/10W
R256	1-216-103-00	METAL GLAZE	180K	5%	1/10W
R257	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R258	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R259	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R260	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R261	1-216-103-00	METAL GLAZE	180K	5%	1/10W
R262	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R263	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R264	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R265	1-216-043-00	METAL GLAZE	560	5%	1/10W
R270	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R280	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R281	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R282	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R283	1-216-048-00	METAL GLAZE	910	5%	1/10W
R285	1-216-025-00	METAL GLAZE	100	5%	1/10W
R286	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R501	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R502	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R503	1-216-041-00	METAL GLAZE	470	5%	1/10W
R504	1-216-039-00	METAL GLAZE	390	5%	1/10W
R505	1-216-041-00	METAL GLAZE	470	5%	1/10W
R506	1-216-041-00	METAL GLAZE	470	5%	1/10W
R507	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R508	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R509	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R510	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R513	1-216-041-00	METAL GLAZE	470	5%	1/10W
R515	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R516	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R517	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R520	1-216-025-00	METAL GLAZE	100	5%	1/10W
R551	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R552	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R553	1-216-041-00	METAL GLAZE	470	5%	1/10W
R555	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R556	1-216-041-00	METAL GLAZE	470	5%	1/10W
R557	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R558	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R559	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R560	1-216-041-00	METAL GLAZE	470	5%	1/10W
R561	1-216-039-00	METAL GLAZE	390	5%	1/10W
R562	1-216-041-00	METAL GLAZE	470	5%	1/10W
R563	1-216-041-00	METAL GLAZE	470	5%	1/10W
R564	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R565	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R566	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R567	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R569	1-216-043-00	METAL GLAZE	560	5%	1/10W
R570	1-216-035-00	METAL GLAZE	270	5%	1/10W
R571	1-216-045-00	METAL GLAZE	680	5%	1/10W
R578	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R579	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R601	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R602	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R603	1-216-041-00	METAL GLAZE	470	5%	1/10W
R605	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R606	1-216-041-00	METAL GLAZE	470	5%	1/10W
R607	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R608	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R609	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R610	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R611	1-216-041-00	METAL GLAZE	470	5%	1/10W
R612	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R613	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R614	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R615	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R617	1-216-035-00	METAL GLAZE	270	5%	1/10W
R618	1-216-045-00	METAL GLAZE	680	5%	1/10W
R621	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R622	1-216-033-00	METAL GLAZE	220	5%	1/10W
R623	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R651	1-216-041-00	METAL GLAZE	470	5%	1/10W
R652	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R653	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R654	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R655	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R656	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R658	1-216-043-00	METAL GLAZE	560	5%	1/10W
R659	1-216-043-00	METAL GLAZE	560	5%	1/10W
R661	1-216-041-00	METAL GLAZE	470	5%	1/10W
R662	1-216-041-00	METAL GLAZE	470	5%	1/10W
R663	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R664	1-216-017-00	METAL GLAZE	47	5%	1/10W
R665	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R666	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R667	1-216-025-00	METAL GLAZE	100	5%	1/10W
R670	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R671	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R672	1-216-049-00	METAL GLAZE	1K	5%	1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
R673	1-216-043-00	METAL GLAZE	560	5%	1/10W
R674	1-216-043-00	METAL GLAZE	560	5%	1/10W
R676	1-216-043-00	METAL GLAZE	560	5%	1/10W
R677	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R678	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R679	1-216-037-00	METAL GLAZE	330	5%	1/10W
R680	1-216-039-00	METAL GLAZE	390	5%	1/10W
R681	1-216-043-00	METAL GLAZE	560	5%	1/10W
R682	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R683	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R684	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R685	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R686	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R687	1-216-047-00	METAL GLAZE	820	5%	1/10W
R688	1-216-043-00	METAL GLAZE	560	5%	1/10W
R701	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R702	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R703	1-216-037-00	METAL GLAZE	330	5%	1/10W
R704	1-216-037-00	METAL GLAZE	330	5%	1/10W
R706	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R707	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R708	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W

VARIABLE RESISTOR

RV201	1-230-494-11	RES, ADJ, CARBON 1K
RV202	1-230-494-11	RES, ADJ, CARBON 1K
RV203	1-230-719-11	RES, ADJ, CARBON 2.2K
RV204	1-230-494-11	RES, ADJ, CARBON 1K
RV501	1-238-012-11	RES, ADJ, CARBON 1K
RV502	1-238-011-11	RES, ADJ, CARBON 470
RV551	1-238-012-11	RES, ADJ, CARBON 1K
RV601	1-238-012-11	RES, ADJ, CARBON 1K
RV602	1-238-012-11	RES, ADJ, CARBON 1K
RV651	1-238-012-11	RES, ADJ, CARBON 1K
RV652	1-238-011-11	RES, ADJ, CARBON 470

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***A-6727-236-A CG-10 BOARD, COMPLETE** (Ref. No. 1000 series)

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CAPACITOR

C685	1-124-446-11	ELECT	47MF	20%	10V
C686	1-162-306-11	CERAMIC	0.01MF	20%	16V
C687	1-102-980-00	CERAMIC	270PF	5%	50V
C688	1-102-980-00	CERAMIC	270PF	5%	50V
C689	1-164-083-11	CERAMIC	680PF	10%	50V
C690	1-130-487-00	MYLAR	0.022MF	5%	50V
C691	1-124-791-11	ELECT	1MF	20%	50V
C692	1-162-306-11	CERAMIC	0.01MF	20%	16V
C693	1-162-291-31	CERAMIC	560PF	10%	50V
C801	1-161-061-11	CERAMIC	0.068MF	10%	25V
C802	1-124-287-00	ELECT	10MF	20%	10V
C852	1-162-209-31	CERAMIC	27PF	5%	50V
C853	1-162-306-11	CERAMIC	0.01MF	20%	16V
C854	1-124-584-00	ELECT	100MF	20%	10V
C855	1-162-199-31	CERAMIC	10PF	5%	50V
C856	1-162-199-31	CERAMIC	10PF	5%	50V
C857	1-162-203-31	CERAMIC	15PF	5%	50V
C858	1-162-203-31	CERAMIC	15PF	5%	50V
C863	1-124-791-11	ELECT	1MF	20%	50V
C864	1-162-217-31	CERAMIC	56PF	5%	50V
C865	1-162-306-11	CERAMIC	0.01MF	20%	16V
C866	1-162-306-11	CERAMIC	0.01MF	20%	16V
C868	1-162-306-11	CERAMIC	0.01MF	20%	16V

Ref.No	Part No.	Description			Remark
C876	1-162-306-11	CERAMIC	0.01MF	20%	16V
C881	1-124-589-11	ELECT	47MF	20%	10V
C890	1-162-306-11	CERAMIC	0.01MF	20%	16V
C891	1-162-282-31	CERAMIC	100PF	10%	50V
C895	1-124-446-11	ELECT	47MF	20%	10V

CONNECTOR

CN585	1-568-073-11	CONNECTOR (RECEPTALE) 8P
CN586	1-568-073-11	CONNECTOR (RECEPTALE) 8P

VARIABLE CAPACITOR

CV851	1-141-245-00	CAP, TRIMMER

DIODE

D851	8-719-911-19	DIODE 1SS119
D852	8-719-911-19	DIODE 1SS119

FERITE BEAD RING

FB026	1-410-397-21	BEAD, FERRITE INDUCTOR

IC

IC685	8-759-996-03	IC LVA519S
IC851	8-759-634-22	IC M50554-182SP

COIL

L027	1-410-324-11	INDUCTOR	4.7UH
L851	1-410-521-11	INDUCTOR	100UH
L852	1-408-424-00	INDUCTOR	180UH
L853	1-408-424-00	INDUCTOR	180UH
L856	1-410-423-11	INDUCTOR	22UH
L861	1-410-521-11	INDUCTOR	100UH
L862	1-410-521-11	INDUCTOR	100UH

TRANSISTOR

Q801	8-729-900-61	TRANSISTOR DTA114ES
Q802	8-729-900-80	TRANSISTOR DTC114ES
Q803	8-729-900-89	TRANSISTOR DTC144ES
Q804	8-729-900-65	TRANSISTOR DTA144ES
Q853	8-729-423-37	TRANSISTOR 2SC3311A-QRS
Q856	8-729-423-44	TRANSISTOR 2SA1309A-QRS
Q857	8-729-423-37	TRANSISTOR 2SC3311A-QRS
Q860	8-729-423-37	TRANSISTOR 2SC3311A-QRS

RESISTOR

R685	1-249-429-11	CARBON	10K	5%	1/4W
R686	1-249-429-11	CARBON	10K	5%	1/4W
R687	1-249-422-11	CARBON	2.7K	5%	1/4W
R688	1-249-434-11	CARBON	27K	5%	1/4W
R689	1-249-430-11	CARBON	12K	5%	1/4W
R690	1-247-903-00	CARBON	1M	5%	1/4W
R691	1-249-414-11	CARBON	560	5%	1/4W
R801	1-249-425-11	CARBON	4.7K	5%	1/4W
R802	1-249-437-11	CARBON	47K	5%	1/4W
R803	1-249-425-11	CARBON	4.7K	5%	1/4W
R804	1-249-441-11	CARBON	100K	5%	1/4W
R851	1-249-423-11	CARBON	3.3K	5%	1/4W
R852	1-249-424-11	CARBON	3.9K	5%	1/4W
R855	1-249-421-11	CARBON	2.2K	5%	1/4W
R856	1-249-414-11	CARBON	560	5%	1/4W
R857	1-249-422-11	CARBON	2.7K	5%	1/4W
R858	1-249-429-11	CARBON	10K	5%	1/4W
R859	1-249-423-11	CARBON	3.3K	5%	1/4W
R860	1-249-424-11	CARBON	3.9K	5%	1/4W
R866	1-249-413-11	CARBON	470	5%	1/4W

When indicating parts by reference number, please include the board name.

CG-10 PI-20

Ref.No	Part No.	Description			Remark
R867	1-249-415-11	CARBON	680	5%	1/4W
R868	1-249-424-11	CARBON	3.9K	5%	1/4W
R870	1-249-413-11	CARBON	470	5%	1/4W
R873	1-249-416-11	CARBON	820	5%	1/4W
R877	1-249-435-11	CARBON	33K	5%	1/4W
R878	1-249-425-11	CARBON	4.7K	5%	1/4W
R879	1-249-413-11	CARBON	470	5%	1/4W
R890	1-249-441-11	CARBON	100K	5%	1/4W
R893	1-249-417-11	CARBON	1K	5%	1/4W
R894	1-249-415-11	CARBON	680	5%	1/4W
R895	1-249-415-11	CARBON	680	5%	1/4W
R902	1-249-406-11	CARBON	120	5%	1/4W
R903	1-249-413-11	CARBON	470	5%	1/4W

VARIABLE RESISTOR

RV685	1-238-015-11	RES, ADJ, CARBON 4.7K

CRYSTAL

X851	1-577-381-11	VIBRATOR, CRYSTAL

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*A-6727-237-A PI-20 BOARD, COMPLETE (Ref. No. 3000 series)

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CAPACITOR

C201	1-124-589-11	ELECT	47MF	20%	16V
C202	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C203	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C204	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C205	1-126-094-11	ELECT	4.7MF	20%	16V
C206	1-126-094-11	ELECT	4.7MF	20%	16V
C207	1-126-094-11	ELECT	4.7MF	20%	16V
C208	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C210	1-126-157-11	ELECT	10MF	20%	16V
C211	1-126-157-11	ELECT	10MF	20%	16V
C212	1-126-157-11	ELECT	10MF	20%	16V
C213	1-126-157-11	ELECT	10MF	20%	16V
C214	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C215	1-126-157-11	ELECT	10MF	20%	16V
C216	1-126-157-11	ELECT	10MF	20%	16V
C217	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C218	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C219	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C220	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C221	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C222	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C223	1-126-157-11	ELECT	10MF	20%	16V
C224	1-126-157-11	ELECT	10MF	20%	16V
C225	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C226	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C227	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C228	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C229	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C234	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C235	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C236	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C237	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C238	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C239	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C241	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C242	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C245	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C246	1-124-589-11	ELECT	47MF	20%	16V
C247	1-124-589-11	ELECT	47MF	20%	16V
C248	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C250	1-124-589-11	ELECT	47MF	20%	16V
C251	1-124-472-11	ELECT	470MF	20%	10V
C252	1-124-589-11	ELECT	47MF	20%	16V
C258	1-124-589-11	ELECT	47MF	20%	16V
C259	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C260	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C261	1-126-320-11	ELECT	10MF	20%	16V
C262	1-126-320-11	ELECT	10MF	20%	16V
C263	1-124-589-11	ELECT	47MF	20%	16V
C264	1-124-589-11	ELECT	47MF	20%	16V

CONNECTOR

CN201	1-569-816-11	CONNECTOR, BOARD TO BOARD 30P
CN202	1-569-816-11	CONNECTOR, BOARD TO BOARD 30P

IC

IC201 ⚠	8-759-800-81	IC LA7016
IC202 ⚠	8-759-822-60	IC LA7222
IC203	8-759-822-60	IC LA7222
IC204 ⚠	8-759-501-20	IC LVA522S
IC205	8-759-800-81	IC LA7016
IC207	8-759-800-81	IC LA7016
IC208	8-759-420-62	IC AN3916

RESISTOR

JR201	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR202	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR203	1-216-296-00	METAL GLAZE	0	5%	1/8W

COIL

L201	1-408-421-00	INDUCTOR	100UH
L203	1-408-421-00	INDUCTOR	100UH
L205	1-408-421-00	INDUCTOR	100UH
L206	1-408-417-00	INDUCTOR	47UH
L207	1-408-417-00	INDUCTOR	47UH
L208	1-408-421-00	INDUCTOR	100UH
L209	1-408-421-00	INDUCTOR	100UH

TRANSISTOR

Q201	8-729-100-66	TRANSISTOR 2SC1623
Q203	8-729-100-66	TRANSISTOR 2SC1623
Q205	8-729-100-66	TRANSISTOR 2SC1623
Q206	8-729-100-66	TRANSISTOR 2SC1623
Q207	8-729-216-22	TRANSISTOR 2SA1162
Q208	8-729-100-66	TRANSISTOR 2SC1623
Q209	8-729-216-22	TRANSISTOR 2SA1162
Q210	8-729-100-66	TRANSISTOR 2SC1623
Q211	8-729-216-22	TRANSISTOR 2SA1162
Q212	8-729-100-66	TRANSISTOR 2SC1623
Q213	8-729-216-22	TRANSISTOR 2SA1162
Q214	8-729-100-66	TRANSISTOR 2SC1623
Q215	8-729-216-22	TRANSISTOR 2SA1162
Q216	8-729-216-22	TRANSISTOR 2SA1162
Q217	8-729-100-66	TRANSISTOR 2SC1623
Q218	8-729-100-66	TRANSISTOR 2SC1623
Q219	8-729-901-01	TRANSISTOR DTC144EK
Q220	8-729-901-01	TRANSISTOR DTC144EK
Q223	8-729-100-66	TRANSISTOR 2SC1623
Q224	8-729-216-22	TRANSISTOR 2SA812
Q225	8-729-100-66	TRANSISTOR 2SC1623
Q226	8-729-100-66	TRANSISTOR 2SC1623
Q227	8-729-216-22	TRANSISTOR 2SA1162
Q228	8-729-100-66	TRANSISTOR 2SC1623

When indicating parts by reference number, please include the board name.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

RESISTOR

Ref.No	Part No.	Description			Remark
R201	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R202	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R204	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R205	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R206	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R207	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R208	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R209	1-216-027-00	METAL GLAZE	120	5%	1/10W
R210	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R211	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R212	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R213	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R214	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R215	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R216	1-216-027-00	METAL GLAZE	120	5%	1/10W
R217	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R218	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R219	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R220	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R221	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R222	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R223	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R224	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R225	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R226	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R227	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R228	1-216-043-00	METAL GLAZE	560	5%	1/10W
R229	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R230	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R231	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R232	1-216-043-00	METAL GLAZE	560	5%	1/10W
R233	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R234	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R235	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R236	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R237	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R238	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R239	1-216-625-11	METAL CHIP	82	0.50%	1/10W
R240	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R241	1-216-029-00	METAL GLAZE	150	5%	1/10W
R242	1-216-029-00	METAL GLAZE	150	5%	1/10W
R243	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R244	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R251	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R252	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R253	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R254	1-216-637-11	METAL CHIP	270	0.50%	1/10W
R255	1-216-625-11	METAL CHIP	82	0.50%	1/10W
R256	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R257	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R258	1-216-639-11	METAL CHIP	330	0.50%	1/10W
R259	1-216-639-11	METAL CHIP	330	0.50%	1/10W
R260	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R261	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R262	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R263	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R264	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R265	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R266	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R267	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R268	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R270	1-249-405-11	CARBON	100	5%	1/4W
R272	1-216-041-00	METAL GLAZE	470	5%	1/10W
R273	1-216-041-00	METAL GLAZE	470	5%	1/10W
R274	1-216-043-00	METAL GLAZE	560	5%	1/10W
R275	1-216-043-00	METAL GLAZE	560	5%	1/10W

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV201	1-238-019-11	RES, ADJ, CARBON 47K

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*A-6727-238-A DG-10 BOARD, COMPLETE (Ref. No: 1000 series)
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CAPACITOR

Ref.No	Part No.	Description			Remark
C101	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C102	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C103	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C104	1-124-438-00	ELECT	1MF	20%	50V
C105	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C106	1-126-177-11	ELECT	100MF	20%	6.3V
C107	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C108	1-126-101-11	ELECT	100MF	20%	16V
C109	1-126-157-11	ELECT	10MF	20%	16V
C110	1-126-094-11	ELECT	4.7MF	20%	35V
C111	1-126-157-11	ELECT	10MF	20%	16V
C112	1-126-094-11	ELECT	4.7MF	20%	35V
C114	1-124-438-00	ELECT	1MF	20%	50V
C115	1-126-099-11	ELECT	2.2MF	20%	35V
C116	1-126-101-11	ELECT	100MF	20%	16V
C117	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C118	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C120	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C124	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C125	1-124-438-00	ELECT	1MF	20%	50V
C127	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C128	1-124-438-00	ELECT	1MF	20%	50V
C129	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C130	1-124-257-00	ELECT	2.2MF	20%	50V
C131	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C132	1-124-464-11	ELECT	0.22MF	20%	50V
C133	1-126-094-11	ELECT	4.7MF	20%	35V
C134	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C135	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C136	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C137	1-126-157-11	ELECT	10MF	20%	16V
C138	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C139	1-126-177-11	ELECT	100MF	20%	6.3V
C140	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C141	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C142	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C143	1-124-438-00	ELECT	1MF	20%	50V
C144	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C145	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C146	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C147	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C148	1-124-438-00	ELECT	1MF	20%	50V
C149	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C150	1-126-177-11	ELECT	100MF	20%	6.3V
C151	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C152	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C153	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C154	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C155	1-124-257-00	ELECT	2.2MF	20%	50V
C156	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C157	1-124-464-11	ELECT	0.22MF	20%	50V
C158	1-126-094-11	ELECT	4.7MF	20%	35V
C159	1-164-232-11	CERAMIC CHIP	0.01MF		50V

When indicating parts by reference number, please include the board name.

DG-10

Ref.No	Part No.	Description			Remark
C161	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C162	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C163	1-126-157-11	ELECT	10MF	20%	16V
C164	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C165	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C166	1-124-438-00	ELECT	1MF	20%	50V
C167	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C168	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C169	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C170	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C171	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C172	1-124-438-00	ELECT	1MF	20%	50V
C174	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C175	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C176	1-126-177-11	ELECT	100MF	20%	6.3V
C177	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C179	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C180	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C181	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C182	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C183	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C184	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C185	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C186	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C187	1-126-157-11	ELECT	10MF	20%	16V
C188	1-126-157-11	ELECT	10MF	20%	16V
C189	1-126-157-11	ELECT	10MF	20%	16V
C190	1-126-157-11	ELECT	10MF	20%	16V
C191	1-126-177-11	ELECT	100MF	20%	6.3V
C192	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C193	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C194	1-126-177-11	ELECT	100MF	20%	6.3V
C196	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C197	1-126-177-11	ELECT	100MF	20%	6.3V
C198	1-126-177-11	ELECT	100MF	20%	6.3V
C199	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C200	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C201	1-126-177-11	ELECT	100MF	20%	6.3V
C202	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C203	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C204	1-124-438-00	ELECT	1MF	20%	50V
C205	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C206	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C207	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C208	1-163-111-00	CERAMIC CHIP	56PF	5%	50V

CONNECTOR

CN101	1-569-772-21	CONNECTOR, BOARD TO BOARD 9P
CN102	1-569-772-21	CONNECTOR, BOARD TO BOARD 9P
CN103	1-568-152-21	CONNECTOR, BOARD TO BOARD 13P

DIODE

D101	8-719-400-18	DIODE MA152WK
D103	8-719-400-18	DIODE MA152WK
D104	8-719-400-18	DIODE MA152WK
D105	8-719-400-18	DIODE MA152WK
D106	8-719-400-18	DIODE MA152WK

FERRITE BEAD RING

FB101	1-410-397-21	FERRITE BEAD INDUCTOR
FB102	1-410-397-21	FERRITE BEAD INDUCTOR

FILTER

Ref.No	Part No.	Description	Remark
FL101	1-236-101-11	ENCAPSULATED COMPONENT	
FL102	1-236-101-11	ENCAPSULATED COMPONENT	
FL103	1-236-101-11	ENCAPSULATED COMPONENT	
FL104	1-236-101-11	ENCAPSULATED COMPONENT	
FL105	1-236-101-11	ENCAPSULATED COMPONENT	
FL106	1-236-101-11	ENCAPSULATED COMPONENT	
FL107	1-236-101-11	ENCAPSULATED COMPONENT	
FL108	1-236-101-11	ENCAPSULATED COMPONENT	
FL109	1-236-071-11	ENCAPSULATED COMPONENT	
FL110	1-236-071-11	ENCAPSULATED COMPONENT	
FL111	1-424-228-11	FILTER, NOISE	
FL112	1-424-228-11	FILTER, NOISE	
FL113	1-424-228-11	FILTER, NOISE	
FL114	1-424-228-11	FILTER, NOISE	
FL115	1-424-228-11	FILTER, NOISE	
FL116	1-424-228-11	FILTER, NOISE	
FL117	1-424-228-11	FILTER, NOISE	
FL118	1-236-071-11	ENCAPSULATED COMPONENT	
FL119	1-236-845-11	FILTER, BAND PASS	
FL120	1-236-845-11	FILTER, BAND PASS	
FL121	1-236-844-11	FILTER, LOW PASS	
FL122	1-236-071-11	ENCAPSULATED COMPONENT	

IC

IC101	8-759-322-29	IC HA118088MP
IC102	8-759-322-31	IC HA11532MP
IC103	8-759-322-30	IC HA11525MP
IC104	8-759-322-33	IC HD49408
IC105	8-759-322-51	IC HM53461ZP-12
IC106	8-759-710-86	IC NJM2233BM
IC107	8-759-711-32	IC NJM2245M
IC108	8-759-008-74	IC MC14001BF

COIL

L101	1-407-169-XX	INDUCTOR	100UH
L102	1-407-169-XX	INDUCTOR	100UH
L103	1-407-169-XX	INDUCTOR	100UH
L105	1-407-169-XX	INDUCTOR	100UH
L106	1-407-169-XX	INDUCTOR	100UH
L107	1-407-169-XX	INDUCTOR	100UH
L108	1-407-169-XX	INDUCTOR	100UH
L109	1-407-169-XX	INDUCTOR	100UH
L110	1-407-169-XX	INDUCTOR	100UH

TRANSISTOR

Q101	8-729-305-25	TRANSISTOR 2SA1052C
Q102	8-729-305-25	TRANSISTOR 2SA1052C
Q103	8-729-305-25	TRANSISTOR 2SA1052C
Q104	8-729-305-25	TRANSISTOR 2SA1052C
Q105	8-729-271-22	TRANSISTOR 2SC2712-G
Q106	8-729-271-22	TRANSISTOR 2SC2712-G
Q107	8-729-305-25	TRANSISTOR 2SA1052C
Q108	8-729-305-25	TRANSISTOR 2SA1052C
Q109	8-729-305-25	TRANSISTOR 2SA1052C
Q110	8-729-305-25	TRANSISTOR 2SA1052C
Q111	8-729-903-10	TRANSISTOR FMW1
Q112	8-729-901-00	TRANSISTOR DTC124EK
Q113	8-729-305-25	TRANSISTOR 2SA1052C
Q114	8-729-271-22	TRANSISTOR 2SC2712-G
Q116	8-729-305-25	TRANSISTOR 2SA1052C
Q117	8-729-271-22	TRANSISTOR 2SC2712-G
Q118	8-729-305-25	TRANSISTOR 2SA1052C
Q119	8-729-903-10	TRANSISTOR FMW1
Q120	8-729-901-00	TRANSISTOR DTC124EK
Q121	8-729-305-25	TRANSISTOR 2SA1052C
Q122	8-729-271-22	TRANSISTOR 2SC2712-G
Q123	8-729-901-00	TRANSISTOR DTC124EK

When indicating parts by reference number, please include the board name.

RESISTOR

Ref.No	Part No.	Description			Remark
R101	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R102	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R103	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R104	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R105	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R106	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R107	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R108	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R109	1-216-117-00	METAL GLAZE	680K	5%	1/10W
R110	1-216-117-00	METAL GLAZE	680K	5%	1/10W
R111	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R112	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R114	1-216-029-00	METAL GLAZE	150	5%	1/10W
R115	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R116	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R117	1-216-117-00	METAL GLAZE	680K	5%	1/10W
R118	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R119	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R120	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R121	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R122	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R123	1-216-041-00	METAL GLAZE	470	5%	1/10W
R124	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R127	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R128	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R139	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R140	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R141	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R143	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R144	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R145	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R146	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R147	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R148	1-216-037-00	METAL GLAZE	330	5%	1/10W
R149	1-216-045-00	METAL GLAZE	680	5%	1/10W
R150	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R151	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R152	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R153	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R154	1-216-013-00	METAL GLAZE	33	5%	1/10W
R155	1-216-033-00	METAL GLAZE	220	5%	1/10W
R156	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R157	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R158	1-216-039-00	METAL GLAZE	390	5%	1/10W
R159	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R160	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R161	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R162	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R163	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R164	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R165	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R166	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R167	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R168	1-216-103-00	METAL GLAZE	180K	5%	1/10W
R170	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R171	1-216-041-00	METAL GLAZE	470	5%	1/10W
R172	1-216-041-00	METAL GLAZE	470	5%	1/10W
R173	1-216-035-00	METAL GLAZE	270	5%	1/10W
R174	1-216-041-00	METAL GLAZE	470	5%	1/10W
R175	1-216-041-00	METAL GLAZE	470	5%	1/10W
R176	1-216-047-00	METAL GLAZE	820	5%	1/10W
R177	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R178	1-216-047-00	METAL GLAZE	820	5%	1/10W
R179	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R180	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R181	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R182	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R183	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R184	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R185	1-216-013-00	METAL GLAZE	33	5%	1/10W
R186	1-216-033-00	METAL GLAZE	220	5%	1/10W
R187	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R188	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R189	1-216-039-00	METAL GLAZE	390	5%	1/10W
R190	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R191	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R192	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R193	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R194	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R195	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R196	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R197	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R198	1-216-103-00	METAL GLAZE	180K	5%	1/10W
R199	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R200	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R201	1-216-672-11	METAL CHIP	7.5K	0.50%	1/10W
R202	1-216-688-11	METAL CHIP	36K	0.50%	1/10W
R203	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R204	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R205	1-216-672-11	METAL CHIP	7.5K	0.50%	1/10W
R206	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R207	1-216-688-11	METAL CHIP	36K	0.50%	1/10W
R208	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R209	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R213	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R214	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R215	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R216	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R218	1-216-125-00	METAL GLAZE	1.5M	5%	1/10W
R219	1-216-125-00	METAL GLAZE	1.5M	5%	1/10W
R222	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R225	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R226	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R227	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R228	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R229	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R230	1-216-295-00	METAL GLAZE	0	5%	1/10W
R231	1-216-295-00	METAL GLAZE	0	5%	1/10W

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV101	1-241-079-11	RES, ADJ, CARBON 4.7K	
RV102	1-241-077-11	RES, ADJ, CARBON 2.2K	
RV103	1-241-081-11	RES, ADJ, CARBON 22K	

COIL, PEAKING

Ref.No	Part No.	Description	Remark
T101	1-411-120-11	COIL, PEAKING	
T102	1-411-119-11	COIL, PEAKING	

CRYSTAL

Ref.No	Part No.	Description	Remark
X101	1-579-053-11	VIBRATOR, CRYSTAL	
X102	1-579-052-11	VIBRATOR, CERAMIC	
X103	1-579-053-11	VIBRATOR, CRYSTAL	
X104	1-579-052-11	VIBRATOR, CERAMIC	

* *

When indicating parts by reference number, please include the board name.

JS-20 | TK-13 | LD-34 | VI-94 | MD-49

Ref.No	Part No.	Description				Remark
	*1-635-216-11	JS-20 BOARD				(Ref. No. 1000 series)

CONNECTOR

CN901	*1-563-610-11	CONNECTOR, FLEXIBLE 7P				

SWITCH

S901	1-572-384-11	SWITCH, ROTARY (JOG)				

* * *

	*1-635-219-11	TK-13 BOARD				(Ref. No. 6000 series)

CONNECTOR

CN301	*1-563-610-11	CONNECTOR, FLEXIBLE 7P				
CN302	1-569-670-11	CONNECTOR, BOARD TO BOARD 8P				

* * *

	*1-635-569-13	LD-34 BOARD				(Ref. No. 1000 series)
D002	1-519-619-11	LIGHT, BACK				
	*3-744-050-01	HOLDER, LCD				

CAPACITOR

C003	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C004	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V	

CONNECTOR

CN001	*1-563-610-11	CONNECTOR, FLEXIBLE 7P				

DIODE

D001	8-719-940-99	DIODE SLR-34VC3				
D003	8-719-940-99	DIODE SLR-34VC3				

IC

IC001	8-759-149-72	IC UPD75304GF-108-3B9				

INDICATOR, ELEMENT

LCD001	1-809-051-11	DISPLAY PANEL, LIQUID CRYSTAL				

RESISTOR

R001	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R002	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R003	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R004	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R007	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

CRYSTAL

X001	1-577-291-11	VIBRATOR, CERAMIC (WITH (C))				

* * *

	*1-635-568-12	VI-94 BOARD				(Ref. No. 6000 series)

CAPACITOR

C004	1-124-229-00	ELECT	33MF	20%	10V	

CONNECTOR

CN101	1-563-599-11	CONNECTOR, FLEXIBLE 22P				
CN102	1-563-588-11	CONNECTOR, FLEXIBLE 11P				
CN103	*1-580-050-11	PIN, CONNECTOR 20P				
CN104	*1-580-050-11	PIN, CONNECTOR 20P				
CN105	1-568-089-11	CONNECTOR (PLUG) 12P				
CN106	1-568-094-11	CONNECTOR (PLUG) 22P				

COIL

L001	1-410-521-11	INDUCTOR	100UH			
L002	1-410-521-11	INDUCTOR	100UH			
L003	1-410-521-11	INDUCTOR	100UH			
L004	1-410-521-11	INDUCTOR	100UH			
L005	1-410-521-11	INDUCTOR	100UH			
L008	1-410-521-11	INDUCTOR	100UH			
L009	1-410-521-11	INDUCTOR	100UH			
L010	1-408-409-00	INDUCTOR	10UH			

RESISTOR

R002	1-249-429-11	CARBON	10K	5%	1/4W	
R003	1-249-417-11	CARBON	1K	5%	1/4W	

* * *

Ref.No	Part No.	Description				Remark
	*A-6754-131-A	MD-49 BOARD, COMPLETE				(Ref. No. 7000 series)
	*3-736-144-01	HOLDER, LED				
	3-736-149-01	HOLDER, ST SENSOR				

CAPACITOR

C001	1-161-494-00	CERAMIC	0.022MF		25V	
C002	1-161-494-00	CERAMIC	0.022MF		25V	
C003	1-126-157-11	ELECT	10MF	20%	16V	
C004	1-161-379-00	CERAMIC	0.01MF	30%	16V	
C005	1-126-157-11	ELECT	10MF	20%	16V	
C006	1-124-589-11	ELECT	47MF	20%	10V	
C008	1-164-159-11	CERAMIC	0.1MF		50V	
C009	1-164-159-11	CERAMIC	0.1MF		50V	
C011	1-162-849-11	CERAMIC	0.068MF	10%	16V	
C012	1-162-849-11	CERAMIC	0.068MF	10%	16V	
C013	1-162-849-11	CERAMIC	0.068MF	10%	16V	
C014	1-126-160-11	ELECT	1MF	20%	50V	
C016	1-124-589-11	ELECT	47MF	20%	16V	
C017	1-126-162-11	ELECT	3.3MF	20%	25V	
C018	1-124-589-11	ELECT	47MF	20%	16V	
C019	1-124-589-11	ELECT	47MF	20%	16V	
C020	1-164-159-11	CERAMIC	0.1MF		50V	
C021	1-162-292-31	CERAMIC	680PF	10%	50V	
C022	1-164-159-11	CERAMIC	0.1MF		50V	
C025	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C026	1-102-074-00	CERAMIC	0.001MF	10%	50V	

CONNECTOR

CN001	1-506-494-11	PIN, CONNECTOR 15P				
CN002	1-569-335-11	CONNECTOR, BOARD TO BOARD 9P				
CN003	1-569-334-11	CONNECTOR, BOARD TO BOARD 5P				
CN004	1-563-622-21	CONNECTOR, FLEXIBLE 19P				
CN005	*1-506-482-11	PIN, CONNECTOR 3P				
CN006	1-569-333-11	CONNECTOR, BOARD TO BOARD 3P				
CN007	1-563-622-21	CONNECTOR, FLEXIBLE 19P				
CN008	*1-506-482-11	PIN, CONNECTOR 3P				

When indicating parts by reference number, please include the board name.

DIODE

Ref.No	Part No.	Description				Remark
D001	8-719-974-65	DIODE GL451V (LED)				
D004	8-719-109-93	DIODE RD6.2ESB2				
D005	8-719-109-93	DIODE RD6.2ESB2				
D006	8-719-109-93	DIODE RD6.2ESB2				
D007	8-719-109-93	DIODE RD6.2ESB2				

IC

Ref.No	Part No.	Description				Remark
IC002	8-759-938-12	IC BA10324				
IC004 ⚠	8-759-234-03	IC TA8424F				

PHOTO SENSOR

Ref.No	Part No.	Description				Remark
PH001	8-759-144-33	PHOTO SENSOR PS6002				
PH002	8-759-144-33	PHOTO SENSOR PS6002				

TRANSISTOR

Ref.No	Part No.	Description				Remark
Q001	8-729-921-53	PHOTO TRANSISTOR PT483F1				
Q002	8-729-921-53	PHOTO TRANSISTOR PT483F1				

RESISTOR

Ref.No	Part No.	Description				Remark
R001	1-249-423-11	CARBON	3.3K	5%	1/4W	
R002	1-249-423-11	CARBON	3.3K	5%	1/4W	
R003	1-249-426-11	CARBON	5.6K	5%	1/4W	
R004	1-249-426-11	CARBON	5.6K	5%	1/4W	
R005	1-249-415-11	CARBON	680	5%	1/4W	
R006	1-249-441-11	CARBON	100K	5%	1/4W	
R007	1-249-441-11	CARBON	100K	5%	1/4W	
R008	1-249-425-11	CARBON	4.7K	5%	1/4W	
R009	1-249-409-11	CARBON	220	5%	1/4W	
R010	1-249-425-11	CARBON	4.7K	5%	1/4W	
R011	1-249-437-11	CARBON	47K	5%	1/4W	
R012	1-249-421-11	CARBON	2.2K	5%	1/4W	
R013	1-249-429-11	CARBON	10K	5%	1/4W	
R014	1-249-426-11	CARBON	5.6K	5%	1/4W	
R015	1-249-437-11	CARBON	47K	5%	1/4W	
R016	1-249-421-11	CARBON	2.2K	5%	1/4W	
R019 ⚠	1-249-377-11	CARBON	0.47	5%	1/4W	F
R020	1-249-406-11	CARBON	120	5%	1/4W	
R021	1-249-383-11	CARBON	1.5	5%	1/4W	
R022	1-249-408-11	CARBON	180	5%	1/4W	
R023	1-249-414-11	CARBON	560	5%	1/4W	
R024	1-249-417-11	CARBON	1K	5%	1/4W	
R025	1-247-891-00	CARBON	330K	5%	1/4W	
R027	1-249-383-11	CARBON	1.5	5%	1/4W	
R028	1-249-383-11	CARBON	1.5	5%	1/4W	

SWITCH

Ref.No	Part No.	Description				Remark
S001	1-570-953-11	SWITCH, PUSH (1 KEY)				
S002	1-570-953-11	SWITCH, PUSH (1 KEY)				
S003	1-570-953-11	SWITCH, PUSH (1 KEY)				

* * *

*1-635-571-11 DI-42 BOARD (Ref. No. 9000 series)
****

CONNECTOR

Ref.No	Part No.	Description				Remark
CN201	1-569-678-21	CONNECTOR, BOARD TO BOARD 9P				
CN202	1-569-678-21	CONNECTOR, BOARD TO BOARD 9P				
CN203	1-568-104-21	CONNECTOR, BOARD TO BOARD 13P				
CN204	1-568-077-11	CONNECTOR (RECEPTALE) 16P				
CN205	1-568-075-11	CONNECTOR (RECEPTALE) 12P				

* * *

*1-635-218-11 TK-12 BOARD (Ref. No. 6000 series)
****

CONNECTOR

Ref.No	Part No.	Description				Remark
CN201	1-563-618-11	CONNECTOR, FLEXIBLE 15P				
CN202	1-569-672-11	CONNECTOR, BOARD TO BOARD 16P				

* * *

DQ-4 BOARD (Ref. No. 10000 series)
****

CAPACITOR

Ref.No	Part No.	Description				Remark
C001	1-162-306-11	CERAMIC	0.01MF	20%	16V	
C002	1-162-306-11	CERAMIC	0.01MF	20%	16V	
C003	1-124-225-00	ELECT	100MF	20%	6.3V	
C004	1-162-294-31	CERAMIC	0.001MF	10%	50V	

CONNECTOR

Ref.No	Part No.	Description				Remark
CN001	*1-563-596-11	CONNECTOR, BOARD TO BOARD 4P				
CN002	*1-563-528-11	CONNECTOR, BOARD TO BOARD 6P				
CN003	1-506-482-11	PIN, CONNECTOR, 3P				

DIODE

Ref.No	Part No.	Description				Remark
D001	8-719-911-19	DIODE 1SS119				

IC

Ref.No	Part No.	Description				Remark
IC001	8-752-321-64	IC CXD1067P				
IC002	8-752-321-64	IC CXD1067P				

RESISTOR

Ref.No	Part No.	Description				Remark
R001	1-249-429-11	CARBON	10K	5%	1/4W	

* * *

When indicating parts by reference number, please include the board name.

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description	Remark
		MISCELLANEOUS * * * * * * * * * * *	
	A-6761-129-A	HEAD BLOCK ASSY, ACE	
	⚠1-413-566-11	SWITCHING BLOCK (POWER BLOCK)	
	1-466-346-11	SWITCH BLOCK, CONROL	
	⚠1-466-164-11	MODULATOR, RF (RFU-1015)	
	1-537-290-31	TERMINAL BOARD	
	1-558-924-41	CABLE, PIN	
	1-506-482-11	PIN, CONNECTOR 3P (FOR LOADING MOTOR)	
	1-506-482-11	PIN, CONNECTOR 3P (FOR CAM MOTOR)	
	1-506-483-21	PIN, CONNECTOR 4P (FOR ACE HEAD)	
	1-543-647-11	HEAD, FE	
	1-575-744-11	WIRE, FLAT TYPE (11 CORE)	
	1-575-745-11	WIRE, FLAT TYPE (19 CORE)	
	1-575-746-11	WIRE, FLAT TYPE (22 CORE)	
	*1-635-572-11	PC BOARD, FP-345	
M901	8-848-531-11	DRUM ASSY, DZH-18A	
M902	8-835-394-01	MOTOR, DC U-26F (CAPSTAN)	
M903	X-3733-302-1	MOTOR ASSY, CAM	
M904	X-3727-784-1	MOTOR ASSY (LOADING)	
S1	1-571-920-11	SWITCH, ROTARY	

* *

Ref.No	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS *	
	1-417-139-11	MATCHING TRANSFORMER, ANTENNA	
	1-465-475-11	REMOTE COMMANDER	
	1-558-076-41	CORD, CONNECTION	
	1-575-334-11	CORD, CONNECTION	
	1-575-335-21	CORD, CONNECTION	
	3-710-901-11	SCREW (3X8), TAPPING	
	*3-738-213-01	CASE, ACCESSORY	
	*3-743-682-01	CUSHION (UPPER)	
	*3-743-683-01	CUSHION (LOWER)	
	3-744-029-11	INDIVIDUAL CARTON	
	3-751-759-21	MANUAL, INSTRUCTION (ENGLSH)	
	3-751-759-31	Candian....MANUAL, INSTRUCTION (FRENCH)	
	*3-795-581-21	SAFEGUARD, IMPORTANT	

HARDWARE
* * * * * * * *

Part No.	Description
	SET SCREW
7-621-732-08	SET-SCT,HEX. 2X3 FLAT POINT
	STOP RING
7-624-102-04	STOP RING 1.5, TYPE -E
	SCREW
7-621-849-10	SCREW,WOOD +R 3.1X13
7-627-552-08	SCREW,PRECISION +P 1.7X2.5
7-628-254-00	SCREW +PS 2.6X5
7-682-547-04	SCREW +P 3X6
7-682-548-04	SCREW +P 3X8
7-682-645-01	SCREW +PS 3X4
7-682-547-04	SCREW +BVTT 3X6 (S)
	TAPPING SCREW
7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S
7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3
7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3
7-685-647-79	SCREW +BVTP 3X10 TYPE2

When indicating parts by reference number, please include the board name.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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SLV-R5UC
RMT-V5A

SONY®
SERVICE MANUAL

US Model
Canadian Model

SUPPLEMENT-1

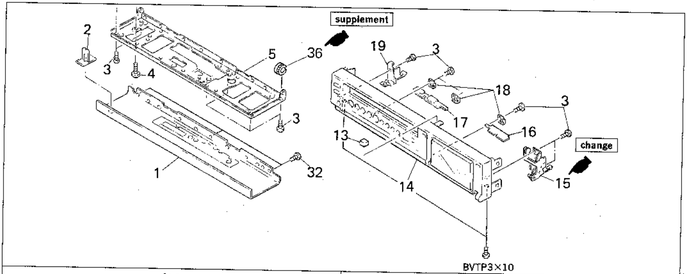
- MODIFICATION OF EXPLODED VIEWS
- ELECTRICAL ADJUSTMENTS
- DIAGRAMS

File this supplement-1 with service manual.

MODIFICATION OF EXPLODED VIEWS

6-1. FRONT PANEL AND CABINET ASSEMBLIES (Page. 135)

Changed parts: FRONT PANEL ASSY
PLATE (R) BLOCK ASSY, FULCRUM



OLD			NEW		
Ref.No	Part No.	Description	Ref.No	Part No.	Description
14	X-3743-561-1	PANEL ASSY, FRONT	14	X-3743-561-2	PANEL ASSY, FRONT
15	A-6759-493-A	PLATE (R) BLOCK ASSY, FULCRUM	15	A-6759-493-C	PLATE (R) BLOCK ASSY, FULCRUM
36	3-749-478-01	RING, GEAR	36	3-749-478-01	RING, GEAR

Direction of distinguish PLATE (R) BLOCK ASSY, FULCRUM

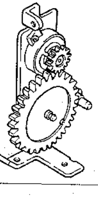
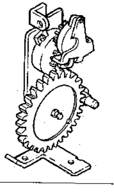
OLD	NEW
A-6759-493-A 	A-6759-493-C 

TABLE OF CONTENTS

Section *Title* *Page*

1. ELECTRICAL ADJUSTMENTS

1-1. Preparation 3
- 1-1-1. Connection of Unit 3
- 1-1-2. Check of Input Signal....4

1-2. Power Source Part Voltge Check....6
- 1-2-1. Check of Power Source Part 6

1-3. Servo System Adjustment....6
- 1-3-1. Switching Position Adjustment 6

1-4. Video System Adjustment....7
- 1-4-1. Recording Current Adjustment 7
- 1-4-2. X-tal OSC Adjustment 8
- 1-4-3. Y Level Adjustment 8
- 1-4-4. DE-MOD Y Level Adjustment 9
- 1-4-5. Playback Y Level Adjustment....9
- 1-4-6. YNR Adjustment....9
- 1-4-7. CNR Adjustment 10
- 1-4-8. SYNC AGC Adjustment 10
- 1-4-9. Sub-Emphasis Limiter Balance Adjustment 10
- 1-4-10. Sub-Emphasis Level Adjustment 10
- 1-4-11. Carrier Deviation Adjustment 11
- 1-4-12. White Clip/Dark Clip Adjustment 12
- 1-4-13. Recording Chroma Adjustment....12
- 1-4-14. Y Gain Adjustment 12
- 1-4-15. 0H Gain/Phase Adjustment 13
- 1-4-16. 2H Gain/Phase Adjustment 14
- 1-4-17. Chroma Gain/Phase Adjustment 15
- 1-4-18. Equalizer 2 Adjustment 15
- 1-4-19. Equalizer 1 Adjustment 15
- 1-4-20. Equalizer 3 Adjustment 15

1-5. Digital System Adjustment....16
- 1-5-1. Write Clock Adjustment 16
- 1-5-2. Read Clock Adjustment 16
- 1-5-3. Clamp Level Adjustment....16
- 1-5-4. HUE Adjustment 16
- 1-5-5. Color Level Adjustment 17
- 1-5-6. AGC Out Level Adjustment 17

Section *Title* *Page*

1-6. Audio System Adjustment 17
- 1-6-1. Hi-Fi Audio System Adjustment 17
- 1-6-2. Normal Audio System Adjustment 19

1-7. Tuner System Adjustment 21
- 1-7-1. RF AGC Adjustment....21
- 1-7-2. Reception Separation Adjustment....21
- 1-7-3. Band Pass Filter f_0 Check 21

1-8. Mode Control System Adjustment 22
- 1-8-1. Clock Adjustment 22
- 1-8-2. Level Meter Adjustment 22

1-9. Character Generator System Adjustment 22
- 1-9-1. 4fsc Check....22
- 1-9-2. AFC Frequency Adjustment 22
- 1-9-3. Character Position Adjustment....23

1-10. Adjusting Element Location 24

2. DIAGRAMS

2-1. Overall Block Diagram 27
2-2. Video Block Diagram 31
2-3. Video In/out Block Diagram 35
2-4. P in P Block Diagram 37
2-5. Servo/System Control Block Diagram 39
2-6. System Control—Video Block Interface....43
2-7. System Control—Servo Peripheral Circuit Interface 45
2-8. System Control—Mechanism Block Interface 47
2-9. System Control—System Control Peripheral Circuit Interface....49
2-10. System Control—Audio Block Interface....49
2-11. Audio Block Diagram 51
2-12. Timer/Tuner/Mode Control Block Diagram 55
2-13. Tuner Block Diagram 57

- In case of page reference, pay attention to the following.
  ( ): Page of SERVICE MANUAL unit.

SECTION 1
ELECTRICAL ADJUSTMENTS

See the adjusting part location diagram from on page 24 for the adjustment.

Required items and indications for all the adjustment of the electric circuit of the unit are described in this section.

[Instruments for Use]

1) Monitor TV
2) Oscilloscope 1, or two phenomena, band with 15MHz or more, with delay mode
3) Frequency counter (6 columns or more)
4) NTSC pattern generator
5) Digital voltmeter
6) Audio level meter
7) Audio generator
8) Attenuator
9) Distortion rate meter
10) Sound dual multiplex signal generator
11) Vetorscope
12) Alignment tape (Normal-VHS)
    Part code : H7099046H (MH-1)
    H7099153H (Hi-Fi 400Hz)
    Alignment tape (S-VHS)
    Part code : 8-192-605-21 (KRV-51HN)

1-1. PREPARATION

1-1-1. Connection of Unit

Adjust with connecting the measurement instruments as shown in the fig. 1-1.

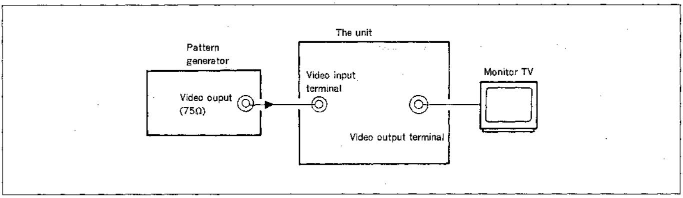

The unit
Pattern generator
Video ouput (75Ω)
Video input terminal
Video output terminal
Monitor TV

Fig. 1-1.

1-1-2. Check of Input Signal

Because the video signal obtained from the pattern generator is used as the adjustment signal for the adjustment, the video output signal is required to satisfy the specified value.

Connect the oscilloscope to the picture input terminal (terminal board). And check that the synchronizing signal amplitude of the video signal is approximately 0.3V, the amplitude of the picture part is approximately 0.7V, the amplitude of the burst signal is approximately 0.3V and is flat, and the ratio of level between the burst signal and the "red" signal is 0.30 : 0.66. The video signal (color bar) used for the adjustment is shown in the fig. 1-2.

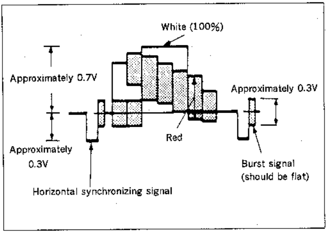

White (100%)
Approximately 0.7V
Approximately 0.3V
Red
Approximately
0.3V
Burst signal
(should be flat)
Horizontal synchronizing signal

Fig. 1-2. Color bar signal of the pattern generator

[Alignment Tape]

- Contents of MH-1 (Normal-VHS)

	Mode	Period	Video signal	Audio signal
1	SP	10 minutes	Stair step	7kHz
2		5 minutes	——	3kHz
3		10 minutes	Color bar	1kHz
4		3 minutes	RF sweep	——

- The case of KRV-51HN (Super-VHS)

	Mode	Period	Video signal
1	SP	5 minutes	Color bar
2	EP	5 minutes	Color bar

[Specified Input-output Level and the Impedance]

Line input 1, 2

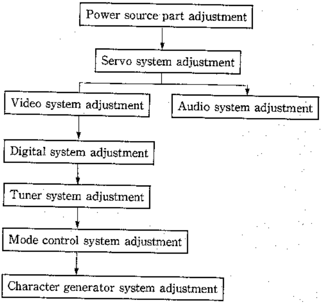
S video input	4-pin mini DIN Luminance signal : 1Vp-p, 75Ω unbalance Chrominance signal : 0.286Vp-p, 75Ω unbalance
Video input	Phono jack Input signal : 1Vp-p, 75Ω unbalance, Synchronouns negative
Audio input	Phono jack Input level : −7.5dBs (0dBs=0.775Vrms) Input impedance : 47kΩ or more

Line output, monitor output

S video output	4-pin mini DIV Luminance signal : 1Vp-p, 75Ω unbalance Chrominance Color signal : 0.286Vp-p, 75Ω unbalance
Video output	Phono jack Output signal : 1Vp-p, 75Ω unbalance, Synchronouns negative
Audio output	Phono jack Specified output : −7.5dBs (at 47kΩ negative) Output impedance : 10kΩ or less

[Adjustment Procedures]

Perform the adjustment following the procedures given below.


Power source part adjustment
Servo system adjustment
Video system adjustment
Audio system adjustment
Digital system adjustment
Tuner system adjustment
Mode control system adjustment
Character generator system adjustment

1-2. POWER SOURCE PART VOLTAGE CHECK

1-2-1. Check of Power Source Part (Power Block)

Mode	E-E
Measuring instrument	Digital voltmeter
SW 12V check	
Measurement point	CN411 Pin ⑪
Specified value	12.0±0.3Vdc
MTR 12V check	
Measurement point	CN412 Pin ⑨
Specified value	12.3±0.3Vdc
SW 5V check	
Measurement point	CN411 Pin ③
Specified value	$5.3^{+0.15}_{-0.1}$Vdc
UNSW 5.8V check	
Measurement point	CN411 Pin ①
Specified value	5.8±0.15Vdc
UNSW 35V check	
Measurement point	CN411 Pin ⑨
Specified value	37^{+5}_{-3}Vdc
−30V check	
Measurement point	CN412 Pin ③
Specified value	$-27.5^{+2.5}_{-3}$Vdc
Heater 3.2V check	
Measurement point	CN412 Pin ⑤ (GND : CN412 Pin ④)
Specified value	3.2±0.5Vdc
SW −6V check	
Measurement point	CN411 Pin ⑧
Specified value	−6.0±0.5Vdc
SW 9V check	
Measurement point	Between CN411 Pin ⑫ and Pin ⑬
Specified value	9.0±0.3Vdc

[Checking Method]

1) Check that each voltage satisfies the specified value.

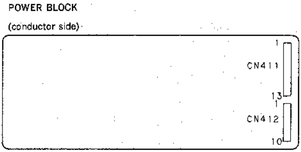

POWER BLOCK
(conductor side)
1
CN411
13
1
CN412
10

Fig. 1-3.

1-3. SERVO SYSTEM ADJUSTMENT

1-3-1. Switching Position Adjustment (MA-62 Board)

Mode	Playback (SP)
Signal	Alignment tape : for operation check (MH-1) Stair step part
Measurement point	CH1 : CN562 Pin ④ (OSD Y IN) CH2 : CN582 Pin ⑫ (RF SW P)
Measuring instrument	Oscilloscope
Adjustment element	RV501
Specified value	6.5±0.5H (410±30μsec)

[Preparation]

- Tracking normal/slow switch.....CENTER

(Press the +/− buttons at the same time.)

[Adjustment Method]

1) Adjust with RV501 to 6.5±0.5H (410±30μsec).

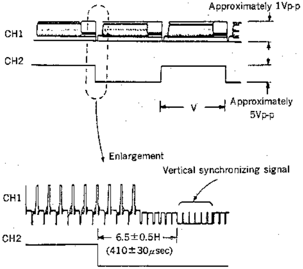

Approximately 1Vp-p
CH1
CH2
V
Approximately 5Vp-p
Enlargement
Vertical synchronizing signal
CH1
CH2
6.5±0.5H
(410±30μsec)

Fig. 1-4.

1-4. VIDEO SYSTEM ADJUSTMENT

For the video system adjustment, follow the adjustment procedures given below as a rule. The color bar video signal supplied from the pattern generator is used as the video input signal for the video system adjustment of the recording mode. Check that the signal satisfies the specified value designated in the "Check of input signal (Fig. 1-2).

Note : Take care that RV203 and 204 on the LR-10 board are not required the adjustment.

[Adjustment Method]

1) Recording current adjustment
2) X-tal OSC adjustment
3) Y level adjustment
4) DE-MOD Y level adjustment
5) Playback Y level adjustment
6) YNR adjustment
7) CNR adjustment
8) SYNC AGC adjustment
9) Sub-emphasis limiter balance adjustment
10) Sub-emphasis level adjustment
11) Carrier deviation adjustment
12) White clip/dark clip adjustment
13) Recording chroma adjustment
14) Y Gain adjustment
15) 0H Gain/Phase adjustment
16) 2H Gain/Phase adjustment
17) Chroma Gain/Phase adjustment
18) Equalizer 2 adjustment
19) Equalizer 1 adjustment
20) Equalizer 3 adjustment

If there is no special indication, adjust with setting the switch and the control at the following positions.

- Input selecting switch....LINE 1
- S-VHS switch....ON

S/N-VHS mode table.

		Normal tape	S-VHS tape
REC	S-VHS switch : ON	N-VHS	S-VHS
	S-VHS switch : OFF	N-VHS	N-VHS
PB	By the recorded tape.		

1-4-1. Recording Current Adjustment (LR-10 Board)

(1) The case of S-VHS

Mode	Recording (SP)
Signal	No-signal
Measurement point	RP-76 board CN204 Pin ③ (SP REC CUR.)
Measuring instrument	Oscilloscope
Adjustment element	RV201
Specified value	4.3±0.1Vp-p

[Adjustment Method]

1) Adjust with RV201 to 4.3±0.1Vp-p.

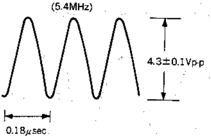


Fig. 1-5.

(2) The case of N-VHS (S-VHS switch....off)

Mode	Recording (SP)
Signal	No-signal
Measurement point	RP-76 board CN204 Pin ③ (SP REC CUR.)
Measuring instrument	Oscilloscope
Adjustment element	RV202
Specified value	2.5±0.1Vp-p

[Adjustment Method]

1) Adjust with RV202 to 2.5±0.1Vp-p.

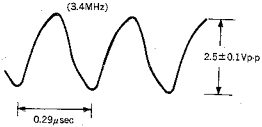


Fig. 1-6.

1-4-2. X-tal OSC Adjustment (YC-92/93 Board)

Mode	Playback
Signal	Alignment tape: for S-VHS operation check (KRV-51HN)
Measurement point	CN031 Pin ⑳
Measuring instrument	Oscilloscope Frequency counter
Adjustment element	CV501 (YC-93)
Specified value	Frequency: 3,579,545±25Hz Level: 240±100mVp-p

[Adjustment Method]

1) Adjust with CV501 so that the frequency is 3,579,545±25Hz.
2) Confirm that the level is 240±100mVp-p.

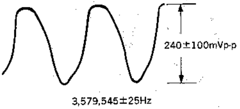


Fig. 1-7.

1-4-3. Y Level Adjustment (YC-93 Board)

Mode	Playback
Signal	Alignment tape: for S-VHS operation check (KRV-51HN) color bar part
Measurement point	CH-1: CN040 Pin (A1) (PB Y OUT) CH-2: CN040 Pin (A3) (Y OUT)
Measuring instrument	Oscilloscope
Adjustment element	RV004
Specified value	CH-1 level=CH-2 level (0±0.05V or less)

[Adjustment Method]

1) Adjust with RV004 so that the Y signal output to CH-1 and the Y signal output to CH-2 is the same level (0±0.05V or less).

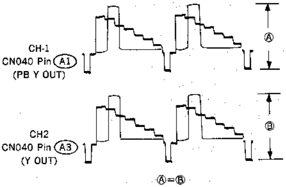


Fig. 1-8.

1-4-4. DE-MOD Y Level Adjustment (YC-92/93 Board)

(1) The case of N-VHS

Mode	Playback
Signal	Alignment tape: for operation check (MH-1) Color bar part
Measurement point	IC301 Pin ㉙ or Pin ㉚ (YC-93)
Measuring instrument	Oscilloscope
Adjustment element	RV106 (YC-92)
Specified value	0.80±0.05Vp-p

[Adjustment Method]

1) Adjust with RV106 to 0.80±0.05Vp-p.

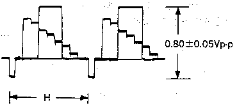


Fig. 1-9.

(2) The case of S-VHS

Mode	Playback
Signal	Alignment tape: for S-VHS operation check (KRV-51HN) color bar part
Measurement point	IC301 Pin ㉙ or Pin ㉚ (YC-93)
Measuring instrument	Oscilloscope
Adjustment element	RV105 (YC-92)
Specified value	0.80±0.05Vp-p

[Adjustment Method]

1) Adjust with RV105 to 0.80±0.05Vp-p.

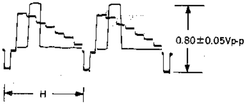


Fig. 1-10.

1-4-5. Playback Y Level Adjustment (YC-92/93 Board)

Mode	Playback
Signal	Alignment tape: for S-VHS operation check (KRV-51HN) color bar part
Measurement point	CN032 Pin ⑧ (Y OUT) (YC-92)
Measuring instrument	Oscilloscope
Adjustment element	RV301 (YC-93)
Specified value	2.25±0.05Vp-p

[Adjustment Method]

1) Adjust with RV301 to 2.25±0.05Vp-p.

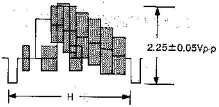


Fig. 1-11.

1-4-6. YNR Adjustment (YC-93 Board)

Mode	E-E (EP)
Signal	Color bar
Measurement point	IC301 Pin ㉑
Measuring instrument	Oscilloscope
Adjustment element	RV304 (YC-93)
Specified value	The minimum of the $Y-Y_D$ level (30mVp-p or less)

[Adjustment Method]

1) Set the EP mode with the REC MODE button.
2) Minimize (30mVp-p or less) the $Y-Y_D$ level with RV304.

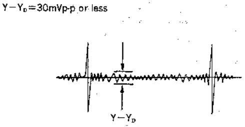


Fig. 1-12.

1-4-7. CNR Adjustment (YC-93 Board)

Mode	Playback
Signal	Alignment tape: for S-VHS operation check (KRV-51HN) color bar part
Measurement point	IC301 Pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	PHASE: RV302 GAIN: RV303
Specified value	The minumum of the noise level (300mVp-p or less)

[Adjustment Method]

1) Adjust alternately with RV302 and RV303 so that the noise level is the minimum. (300mVp-p)

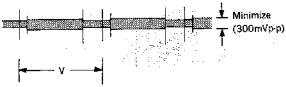


Fig. 1-13.

1-4-8. SYNC AGC Adjustment (YC-92 Board)

Mode	E-E
Signal	Color bar
Measurement point	CN032 Pin ⑧
Measuring instrument	Oscilloscope
Adjustment element	RV101
Specified value	2.25±0.05Vp-p

[Adjustment Method]

1) Adjust with RV101 to 2.25±0.05Vp-p.

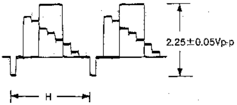


Fig. 1-14.

1-4-9. Sub-emphasis Limiter Balance Adjustment (YC-92 Board)

Mode	E-E (EP)
Signal	No-signal
Measurement point	IC202 Pin ③
Measuring instrument	Digital voltmeter
Adjustment element	RV201
Specified value	3.48±0.05Vdc

[Adjustment Method]

1) Set the EP mode with the REC MODE button.
2) Adjust with RV201 to 3.48±0.05Vdc.

1-4-10. Sub-emphasis Level Adjustment (YC-92/93 Board)

Mode	E-E
Signal	Color bar turned off the chroma signal
Measurement point	IC301 Pin ㉙ or ㉚ (YC-93)
Measuring instrument	Oscilloscope
Adjustment element	RV202 (YC-92)
Specified value	0.80±0.05Vp-p

[Adjustment Method]

1) Adjust with RV202 to 0.80±0.05Vp-p. (Except for the spike part.)

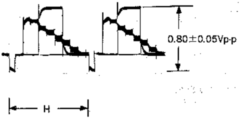


Fig. 1-15.

1-4-11. Carrier Deviation Adjustment (YC-92 Board)

(1) The case of N-VHS (S-VHS switch....off)

Sync tip carrier set	
Mode	E-E
Signal	No-signal
Measurement point	IC101 Pin ⑱ or CN031 Pin ⑦
Measuring instrument	Frequency counter
Adjustment element	RV109
Specified value	3.40±0.05MHz
Deviation adjustment	
Mode	Recording and Playback
Signal	Color bar
Measurement point	CN032 Pin ⑧
Measuring instrument	Oscilloscope
Adjustment element	RV102
Specified value	2.25±0.05Vp-p

[Adjustment Method]

1) Set the E-E mode inserting the color bar signal.
2) Set the E-E mode setting the no-signal input.
3) Connect the frequency counter to the IC101 Pin ⑱, and adjust with RV109 to 3.40±0.05MHz.
4) Input the color bar signal and record.
5) Play back the recorded part and check the playback Y signal level of the CN032 Pin ⑧. (Fig. 1-16.)
   Specified value: Should be 2.25±0.05Vp-p.

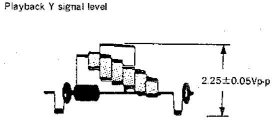


Fig. 1-16.

6) When the specified value is not satisfied, input the color bar signal, set the E-E mode, and adjust with RV102 so that the error of the playback Y signal level is corrected. After the adjustment, repeat the procedures from 2) to 5).

(2) The case of S-VHS

Sync tip carrier set	
Mode	E-E
Signal	No-signal
Measurement point	IC101 Pin ⑱ or CN031 pin ⑦
Measuring instrument	Frequency counter
Adjustment element	RV107
Specified value	5.40±0.05MHz
Deviation adjustment	
Mode	Recording and Playback
Signal	Color bar
Measurement point	CN032 Pin ⑧
Measuring instrument	Oscilloscope
Adjustment element	RV103
Specified value	2.25±0.05Vp-p

[Adjustment Method]

1) Set the E-E mode inserting the color bar signal.
2) Set the E-E mode setting the no-signal input.
3) Connect the frequency counter to the IC101 Pin ⑱, and adjust with RV107 to 5.40±0.05MHz.
4) Input the color bar signal and record.
5) Play back the recorded part and check the playback Y signal level of the CN032 Pin ⑧. (Fig. 1-17.)
   Specified value: Should be 2.25±0.05Vp-p.

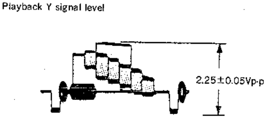


Fig. 1-17.

6) When the specified value is not satisfied, input the color bar signal, set the E-E mode, and adjust with RV103 so that the error of the playback Y signal level is corrected. After the adjustment, repeat the procedures from 2) to 5).

1-4-12. White Clip/Dark Clip Adjustment (YC-92 Board)

Mode	E-E(EP)
Signal	Color bar
Measurement point	IC101 Pin ⑭
Measuring instrument	Oscilloscope
Adjustment element	White clip : RV104 Dark clip : RV108
Specified value	White clip : 210±10% Dark clip : 70±10%

[Adjustment Method]

1) Set the EP mode with the REC MODE switch.
2) Adjust with RV104 so that the white clip level is 210±10% to the white (100%) level.
3) Adjust with RV108 so that the dark clip level is 70±10% to the white (100%) level.

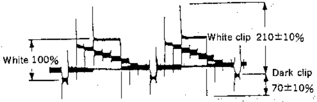


Fig. 1-18.

1-4-13. Recording Chroma Adjustment (YC-92/93 Board)

Mode	E-E
Signal	Color bar
Measurement point	IC033 Pin ⑥ (REC RF C) (YC-92)
Measuring instrument	Oscilloscope
Adjustment element	RV501 (YC-93)
Specified value	38±5mVp-p

[Adjustment Method]

1) Set the SP mode with the REC MODE switch.
2) Adjust with RV501 to 38±5mVp-p.

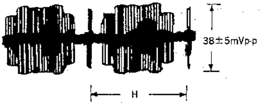


Fig. 1-19.

1-4-14. Y Gain Adjustment (LR-10 Board)

Mode	E-E
Signal	Color bar turn off the chroma signal
Measurement point	CH-1 : CN020 Pin ⑤ CH-2 : CN020 Pin ①
Measuring instrument	Oscilloscope
Adjustment element	RV551
Specified value	CH1 level=CH2 level±0.05V

[Adjustment Method]

1) Adjust with RV551 so that the Y signal output to CH-1 and CH-2 is the same level (0±0.05V or less).

1-4-15. 0H Gain/Phase Adjustment (LR-10 Board)

Note : Although there is an adjustment by the multi-burst and the color bar input, perform the adjustment by the multi-burst input because the color bar input is not allowed to perform the proper adjustment.

(1) The case of the multi-burst input

Mode	Recording
Signal	Multi-burst (Signal generator)
Measurement point	CN020 Pin ⑦ (EEC OUT)
Measuring instrument	Oscilloscope
Adjustment element	PHASE : RV501 GAIN : RV502
Specified value	The minimum of the 3.58MHz level (50mVp-p or less)

[Connection]

1) Short between Q506 Ⓑ and Q607 Ⓔ.

[Adjustment Method]

1) Adjust alternately with RV501 and RV502 so that the 3.58MHz level is the minimum (50mVp-p or less).
2) Perform the "1-4-16. 2H Gain/Phase adjustment".

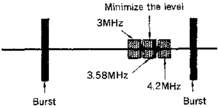


Fig. 1-20. (a)

(2) The case of color bar input

Mode	Recording
Signal	Color bar
Measurement point	CH-1 : IC651 Pin ① CH-2 : IC651 Pin ③
Measuring instrument	Oscilloscope (40MHz or more, with ADD mode)
Adjustment element	PHASE : RV501 GAIN : RV502
Specified value	The minimum of the chroma component (10mVp-p or less)

Note : For CH-1 and CH-2, the same type of the probe should be used.
(The Gain phase of CH-1 and CH-2 should be adopted.)

[Adjustment Method]

1) Install the capacitor in parallel with 2.5 times input capacity as much as probe for use to R571 (680Ω).

   For example : In the case that the input capacity of the probe is 13 [pF]
   13 [pH] × 2.5 [times] = 32.5 ≒ 33 [pF]

2) Set the oscilloscope to the ADD mode and adjust the range to 5mV/div.
3) Adjust alternately with RV501 and RV502 so that the chroma component is the minimum (10mVp-p or less).
4) After the adjustment, be sure to perform「1-4-16. 2H Gain/Phase adjustment (2) The case of color bar input」.

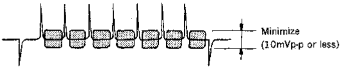


Fig. 1-20. (b)

1-4-16. 2H Gain/Phase Adjustment (LR-10 Board)

Note : Although there is an adjustment by the multi-busrt and the color bar input, perform the adjustment by the multi-burst input because the color bar input is not allowed to perform the proper adjustment.

(1) The case of multi-burst input

Mode	Recording
Signal	Multi-burst (signal generator)
Measurement point	CN020 Pin ⑦ (EEC OUT)
Measuring instrument	Oscilloscope
Adjustment element	PHASE : RV602 GAIN : RV601
Specified value	The minimum of 3.58MHz (50mVp-p or less)

[Connection]

1) Short between Q506 Ⓔ and Q607 Ⓔ.
2) Short between Q506 Ⓑ and GND.

[Adjustment Method]

1) Adjust alternately with RV601 and RV602 so that the 3.58MHz level is the minimum (50mVp-p or less).
2) After the ajustment, open between Q506 Ⓔ and Q607 Ⓔ, and between Q506 Ⓑ and GND.

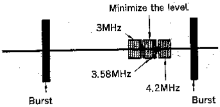


Fig. 1-21. (a)

(2) The case of color bar input

Mode	Recording
Signal	Color bar
Measurement point	CH-1 : IC651 Pin ⑤ CH-2 : IC651 Pin ③
Measuring instrument	Oscilloscope (40MHz or more, with ADD mode)
Adjustment element	PHASE : RV602 GAIN : RV601
Specified value	The minimum of the chroma component (10mVp-p or less)

Note : For CH-1 and CH-2, the same type of the probe should be used.
(The Gain phase of CH-1 and CH-2 should be adopted.)

[Adjustment Method]

1) Install the capacitor in parallel with 2.5 times input capacity as much as probe for use to R571 (680Ω).

   For example : In the case that the input capacity of the probe is 13 [pF]
   13 [pH] × 2.5 [times] = 32.5 ≒ 33 [pF]

2) Set the oscilloscope to the ADD mode and adjust the range to 5mV/div.
3) Adjust alternately with RV601 and RV602 so that the chroma component is the minimum (10mVp-p or less).
4) After the adjustment, remove the capacitor installed in parallel to R571.

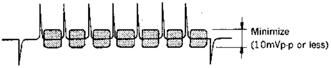


Fig. 1-21. (b)

1-4-17. Chroma Gain/Phase Adjustment (LR-10 Board)

Mode	E-E
Signal	Color bar
Measurement point	CN020 Pin ⑤ (Y OUT)
Measuring instrument	Oscilloscope
Adjustment element	PHASE: RV651 GAIN: RV652
Specified value	The minimum of the red level (20mVp-p or less)

[Adjustment Method]

1) Adjust alternately with RV651 and RV652 so that the chroma component of the red level is the minimum (20mVp-p or less).

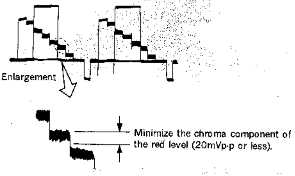

Enlargement
Minimize the chroma component of the red level (20mVp-p or less).

Fig. 1-22.

1-4-18. Equalizer 2 Adjustment (YC-93 Board)

Mode	Playback
Signal	Alignment tape color bar part
Measurement point	Connecting point of C033 and R083
Measuring instrument	Oscilloscope
Adjustment element	PHASE: CV002 GAIN: RV002
Specified value	The minimum of the 3.58MHz component (10mVp-p or less)

[Adjustment Method]

1) Adjust alternately with RV002 and CV002 so that the 3.58MHz component of the flat part of the chroma signal is the minimum (10mVp-p or less).

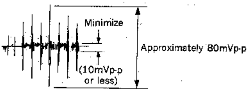

Minimize
(10mVp-p or less)
Approximately 80mVp-p

Fig. 1-23.

1-4-19. Equalizer 1 Adjustment (YC-93 Board)

Mode	Playback
Signal	Alignment tape color bar part
Measurement point	Connecting point of C024 and Q020 base
Measuring instrument	Oscilloscope
Adjustment element	PHASE: CV001 GAIN: RV001
Specified value	The minimum of the 3.58MHz component (50mVp-p or less)

[Adjustment Method]

1) Adjust alternately with RV001 and CV001 so that the 3.58MHz component of the flat part of the chroma signal is the minimum (50mVp-p or less).

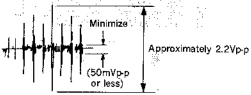

Minimize
(50mVp-p or less)
Approximately 2.2Vp-p

Fig. 1-24.

1-4-20. Equalizer 3 Adjustment (YC-93 Board)

Mode	E-E
Signal	Color bar
Measurement point	Connecting point of C377 and Q032 Ⓒ
Measuring instrument	Oscilloscope
Adjustment element	PHASE: CV003 GAIN: RV003
Specified value	The minimum of the 3.58MHz component (10mVp-p or less)

[Connection]

1) Connect the connecting point of R092 and Q032 Ⓒ with the 9V line at 10kΩ.

[Adjustment Method]

1) Adjust alternately with RV003 and CV003 so that the 3.58MHz component of the flat part of the chroma signal is the minimum (10mVp-p or less).
2) After the adjustment, remove the resistance of 10kΩ.

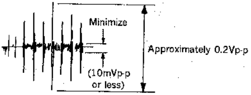

Minimize
(10mVp-p or less)
Approximately 0.2Vp-p

Fig. 1-25.

1-5. DIGITAL SYSTEM ADJUSTMENT

1-5-1. Write Clock Adjustment (DG-10 Board)

Mode	E-E, P IN P
Signal	Color bar
Measurement point	IC105 Pin ㉔
Measuring instrument	Oscilloscope
Adjustment element	T101
Specified value	280±2nsec

[Adjustment Method]

1) Adjust with T101 to 280±2nsec.

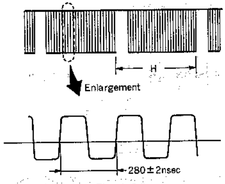

H
Enlargement
280±2nsec

Fig. 1-26.

1-5-2. Read Clock Adjustment (DG-10 Board)

Mode	E-E, P IN P
Signal	Color bar
Measurement point	IC105 Pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	T102
Specified value	62±0.5nsec

[Adjustment Method]

1) Adjust with T102 to 62±0.5nsec.

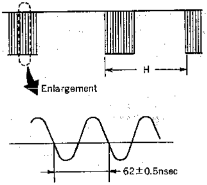

H
Enlargement
62±0.5nsec

Fig. 1-27.

1-5-3. Clamp Level Adjustment (DG-10 Board)

Mode	E-E, P IN P
Signal	Color bar
Measurement point	IC101 Pin ⑥
Measuring instrument	Oscilloscope
Adjustment element	RV101
Specified value	The pedestal level of the parent screen and the child screen is the same.

[Adjustment Method]

1) Adjust with RV101 so that the pedestal level of the parent screen and the child screen is the same.

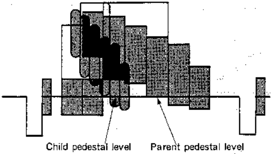

Child pedestal level
Parent pedestal level

Fig. 1-28.

1-5-4. HUE Adjustment (DG-10 Board)

Mode	E-E, P IN P
Signal	Color bar
Measurement point	Monitor output video terminal (75Ω termination)
Measuring instrument	Vectorscope
Adjustment element	RV103
Specified value	The phase of the parent screen and the child screen is the same.

[Adjustment Method]

1) Adjust with RV103 so that the phase of the parent screen and the child screen is the same.
(Adjust on the Y_L part.)

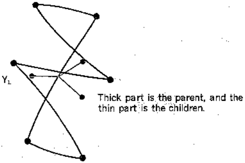

Y_L
Thick part is the parent, and the thin part is the children.

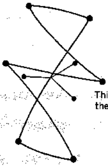
Fig. 1-29.

1-5-5. Color Level Adjustment (DG-10 Board)

Mode	E-E, P IN P
Signal	Color bar
Measurement point	Monitor output video terminal (75Ω termination)
Measuring instrument	Vectorscope
Adjustment element	RV102
Specified value	The color level of the parent screen and the child screen is the same.

[Adjustment Method]

1) Adjust with RV102 so that the color level of the parant screen and the child screen is the same.



Thick part is the parent, and the thin part is the children.

Fig. 1-30.

1-5-6. AGC Out Level Adjustment (PI-20 Board)

Mode	E-E, P IN P
Signal	Color bar
Measurement point	IC208 Pin ⑭
Measuring instrument	Oscilloscope
Adjustment element	RV201
Specified value	2.2±0.1Vp-p

[Adjustment Method]

1) Adjust with RV201 to 2.2±0.1Vp-p.

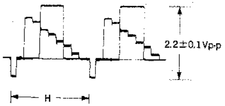


Fig. 1-31.

1-6. AUDIO SYSTEM ADJUSTMENT

- For the adjustment of the audio system, perform in the SP mode if there is no special notes. Use the alignment tape.
- Adjust both LCH and RCH.

[Connecting Instruments]

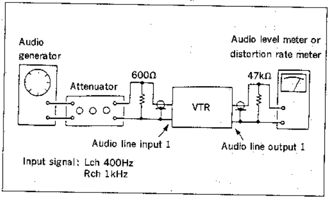

Audio generator
Attenuator
600Ω
VTR
47kΩ
Audio level meter or distortion rate meter
Audio line input 1
Audio line output 1
Input signal: Lch 400Hz
Rch 1kHz

Fig. 1-32.

1-6-1. Hi-Fi Audio System Adjustment

Perform the adjustment setting the switches and controls on the following positions if there is no special indications.

INPUT SELECT switch....LINE 1
MPX FILTER switch....OFF
REC LEVEL control.... Adjust to −21dBs with CN001 Pin ① and Pin ② of the HF-9 board.

[Adjustment Procedures]

1. VCO f_0 adjustment
2. AFM deviation adjustment
3. Switching pulse position adjustment
4. PB RF level adjustment
5. Playback level adjustment

1. VCO f_0 adjustment (HF-9 board)

Mode	Recording
Signal	No-signal
Measuring instrument	Frequency counter
1.3MHz adjustment	
Measurement point	IC002 Pin ③
Adjustment element	RV008
Specified value	1300±2kHz
1.7MHz adjustment	
Measurement point	IC002 Pin ㉚
Adjustment element	RV002
Specified value	1700±2kHz

Note: Connect the frequency counter through the buffer amplifier (oscilloscope, etc) with high input resistance (1MΩ or more) and low capacity (10pF or less).

[Adjustment Method]

1) Connect the frequency counter with each measurement points.
2) Adjust with RV008 and RV002 so that the frequency satisfies each specified value.

2. AFM deviation adjustment (HF-9 board)

Mode	Recording
Signal	Designated input
Measurement point	IC002 Pin ③ (Lch) IC002 Pin ㉚ (Rch)
Measuring instrument	Frequency counter
Adjustment element	RV009 (Lch) RV003 (Rch)
Specified value	50.0±0.1kHz (both channel)

[Adjustment Method]

1) Adjust with RV009 so that the frequency of the IC002 Pin ③ satisfies the specified value.
2) Adjust with RV003 so that the frequency of the IC002 Pin ㉚ satisfies the specified value.

3. Switching pulse position adjustment (HF-9 board)

Mode	Playback
Signal	Tape recorded HiFi
Measurement point	CN571 Pin ⑨ and Pin ⑮ (MA-62 board)
Measuring instrument	Oscilloscope
Adjustment element	RV006
Specified value	Fig. 1-33.

[Adjustment Method]

1) Adjust with RV006 so that RF is not left in the switching position.

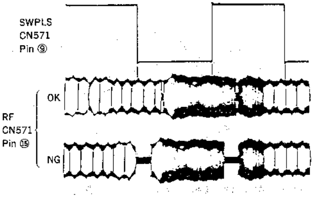


Fig. 1-33.

4. PB RF level adjustment (HF-9 board)

Mode	Playback
Signal	Carrier frequency : 1.3MHz, No-modulation Input −22dBs to the CN002 Pin ③ and Pin ④, and input 333Hz and −8dBs to CN001 Pin ⑧.
Measurement point	IC002 Pin ⑪, CN001 Pin ④ and Pin ⑤
Measuring instrument	Digital voltmeter Audio level meter
Adjustment element	RV005

[Adjustment Method]

1) Adjust with RV005 so that the IC002 Pin ⑪ is LOW (0V), and then adjust with RV005 until the moment when the IC002 Pin ⑪ becomes HIGH (3.3V or more).
2) When the IC002 Pin ⑪ becomes HIGH, check that 333Hz and −8dBs is output to CN001 Pin ④ and Pin ⑤.

5. Playback level adjustment (HF-9 board)

Mode	Playback
Signal	Alignment tape (HiFi 400Hz)
Measurement point	Audio line output (L, R)
Measuring instrument	Audio level meter
Adjustment element	Lch : RV007 Rch : RV004
Specified value	−7.5±0.1dBs

[Adjustment Method]

1) Adjust with RV007 for the L channel and with RV004 for the R channel so that the playback level is −7.5±0.1dBs.

1-6-2. Normal Audio System Adjustment

- Adjust in the SP mode if there is no special indications.
- Perform the adjustment setting the switch on the following positions.
  INPUT SELECT....LINE 1
  AUDIO MONITOR....NORMAL

[Adjustment Method]

1. ACE head adjustment....Refer to the mechanical part adjustment
2. E-E output level check
3. Recording bias adjustment
4. Total level characteristic, distortions rate check
5. Total S/N check

1. ACE head adjustment

Refer to the "Mechanical adjustment".

2. E-E output level check

Mode	E-E
Signal	L, R : 400Hz, −7.5dBs
Measurement point	Audio line output terminal
Measuring instrument	Audio level meter
Specified value	−7.5±2dBs

[Checking Method]

1) Input signal of 400Hz and −7.5dBs to the L and R channel of the audio input at the same time.
2) Check that the audio output level is −7.5±2dBs.

3. Recording bias adjustment (MA-62 board)

Mode	Recording and playback
Signal	400Hz, −30dBs 7kHz, −30dBs
Measurement point	Audio output terminal
Measuring instrument	Audio level meter
Adjustment element	RV251
Specified value	0±1dBs

[Adjustment Method]

1) Supply the signal of 400Hz and −30dBs to the audio line input.
2) Connect the audio level meter to the audio line output.
3) Adjust with the attenuator so that the audio level meter indicates −30dBs.
4) Record in the SP mode.
5) Record the sound line input signal at 7kHz.
6) Play back the recorded part and measure the output level of 400Hz and 7kHz.
7) Check that the playback output level of 7kHz is 0±1dB to the playback output level of 400Hz. When the specified value is not satisfied, adjust with RV251 and repeat the procedures from 1) to 7).

4. Total level characteristic, distortion rate check

Mode	Recording and playback
Signal	400Hz, −7.5dBs
Measurement point	Audio output terminal
Measuring instrument	Audio level meter and distortion rate meter
Specified value	Playback level: −7.5±2dBs Distortion rate: 4% or less

[Checking Method]

1) Supply the audio signal of 400Hz and −7.5dBs to the L and R channel of the audio line input at the same time.
2) Record it.
3) Play back the recorded part.
4) Check that the playback level is −7.5±2dBs.
5) Check that the distortion rate is within 4%.

5. Total S/N check

Mode	Recording and playback
Signal	400Hz, −7.5dBs and no-signal
Measurement point	Audio output terminal
Measuring instrument	Audio level meter
Specified value	38dB or more

[Checking Method]

1) Supply the signal of 400Hz to the L and R channel of the audio line input at the same time, and adjust with the attenuator so that the audio output level of the L channel is −7.5dBs.
2) Record it.
3) Set the no-signal input with keeping the recording mode. (Short the input terminal of L and R with GND.)
4) Play back the recorded part, and check that the level difference between the 400Hz part and no-signal part (the part just after the 400Hz signal) is 38dB or more.

1-7. TUNER SYSTEM ADJUSTMENT

1-7-1. RF AGC Adjustment (IF001 Unit/TU-120 Board)

Signal	Broadcast TV signal
Adjustment element	VR of IF001 unit (Fig. 1-34)

[Adjustment Method]

1) Adjust the monitor TV to be the best contrasted.
2) Turn the VR and show the snow noise.
3) Turn the VR counterclockwise and set the point where the snow noise is disappeared.
4) Receive each channeal and check that there is no snow noise and distortion of the beat picture caused by the cross modulation.

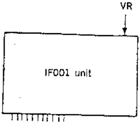


Fig. 1-34.

1-7-2. Reception Separation Adjustment (TU-120 Board)

Signal	Stereo L CH : 400Hz 100% modulation R CH : No-modulation
Measurement point	Audio line output : L, R channel
Measuring instrument	Oscilloscope
Adjustment element	RV001

[Setting of Switches]

Recording level (MF-101 board, RV104 (R CH), RV103 (L CH)....Center click

[Adjustment Method]

1) Set the dual multiplex audio signal generator in the stereo mode, and perform the 100% and 400Hz modulation for only L channel.
2)
3) Adjust with RV001 so that the R CH output is the minimum. At this time, RV001 should not be turned to the end. (The display of 「STEREO」 should be flashed.)

1-7-3. Band Pass Filter f_0 Check (TU-120 Board)

Signal	Monaural and stereo
Measurement point	CN001 Pin ⑥
Measuring instrument	Digital voltmeter
Specified value	Table 1-1.

[Checking Method]

1) Set the sound dual multiplex signal generator in the stereo mode and the monaural mode.
2) Check that the CN001 Pin ⑥ satisfy the specified value.

Table 1-1.

	CN001 Pin ⑥
Monaural	H
Stereo	L

L : 0.5Vdc or less
H : 3.5Vdc or more

1-8. MODE CONTROL SYSTEM ADJUSTMENT

1-8-1. Clock Adjustment (MF-94 Board)

Measurement point	IC201 Pin ⑧
Measuring instrument	Interval counter
Adjustment element	CV201
Specified value	0.1249995±0.0000005sec.

[Adjustment Method]

1) Short the TEST POINT (between R109 and R110) on the MF-101 board with GND with the jumper wire. (The buzzer will ring, so short both ends of the buzzer if the sound is noisy.)
2) Connect the 9 stage binary counter with IC201 Pin ⑧ and measure the counter output.
3) Adjust with CV201 to 0.1249995±0.0000005sec.

Note : The adjustment with CV201 should not be performed except for the replacing of the microcomputer(IC201).

4) After the adjustment, disconnect the jumper wire.

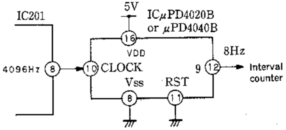


Fig. 1-35.

1-8-2. Level Meter Adjustment (MF-94 Board)

The case of R CH is shown in 〈 〉.

Signal	400Hz, −7.5dBs
Input point	CN202 Pin ② 〈Pin ①〉
Adjustment element	RV201 〈RV202〉
Adjustment value	The flashing of the level meter 0dB display part

[Setting of Switches]

Recording level (MF-101 board, RV104 (R CH), RV103 (L CH)....Center click

[Adjustment Method]

1) Input 400Hz and −7.5dBs to the CN202 Pin ②.
2) Adjust with RV201 〈RV202〉 so that the 0dB display part of each channel level of the level meter is flashing.

1-9. CHARACTER GENERATOR SYSTEM ADJUSTMENT

1-9-1. 4fsc Check (CG-10 Board)

Mode	E-E
Signal	No-signal
Measurement point	IC851 Pin ㉘
Measuring instrument	Frequency counter
Specified value	14318180±100Hz

Note : Connect the frequency counter through the buffer amplifier (oscilloscope, etc) with high input resistance (1MΩ or more) and low capacity (10pF or less).

[Checking Method]

1) Check that the value is 14318180±100Hz.

1-9-2. AFC Frequency Adjustment (CG-10 Board)

Mode	E-E
Signal	No-signal
Measurement point	IC685 Pin ⑧
Measuring instrument	Frequency counter
Adjustment element	RV685
Specified value	15734±50Hz

Note : Connect the frequency counter through the buffer amplifier (oscilloscope, etc) with high input resistance (1MΩ or more) and low capacity (10pF or less).

[Adjustment Method]

1) Connect between IC685 Pin ① and Pin ⑨ at 1kΩ.

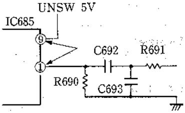


Fig. 1-36.

2) Adjust with RV685 to 15734±50Hz.
3) After the adjustment, disconnect the resistance provided in the procedure 1).

1-9-3. Character Position Adjustment (CG-10 Board)

Mode	E-E
Signal	Color bar
Measurement point	IC851 Pin ⑤
Measuring instrument	Frequency counter
Adjustment element	CV851
Specified value	7.7±0.02MHz

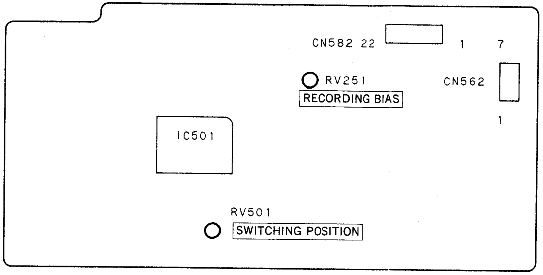
Note: Connect the frequency counter through the buffer amplifier (oscilloscope, etc) with high input resistance (1MΩ) and low capacity (10pF or less).

[Adjustment Method]

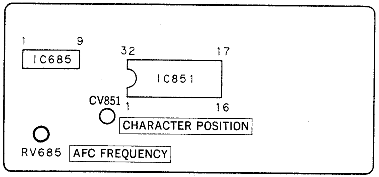
1) Adjust with CV851 to 7.7±0.02MHz.

1-10. ADJUSTING ELEMENT LOCATION

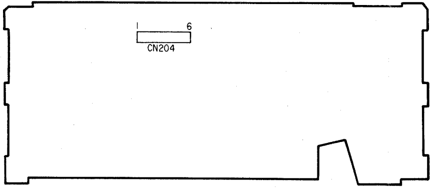
MA-62 BOARD (CONDUCTOR SIDE)


CN582 22
1
7
CN562
1
RV251
RECORDING BIAS
IC501
RV501
SWITCHING POSITION

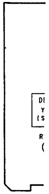
CG-10 BOARD (COMPONENT SIDE)


1
9
IC685
32
17
IC851
CV851
1
16
CHARACTER POSITION
RV685
AFC FREQUENCY

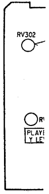
RP-76 BOARD (CONDUCTOR SIDE)



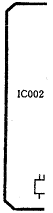
YC-92



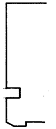
YC-93



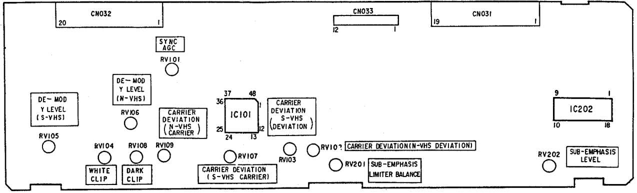
HF-9 B



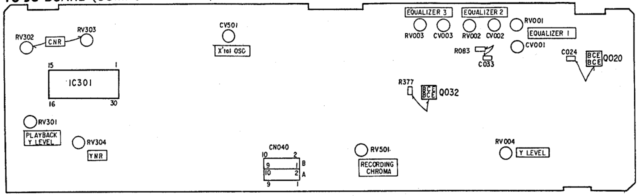
LR-10



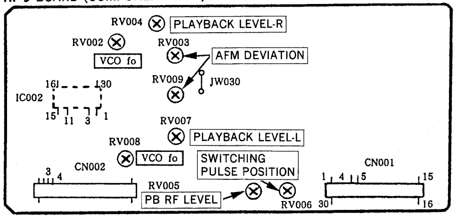
YC-92 BOARD (COMPONENT SIDE)


CN032
20
1
CN033
12
1
CN031
19
1
SYNC AGC
RV101
DE-MOD Y LEVEL (N-VHS)
RV106
DE-MOD Y LEVEL (S-VHS)
RV105
CARRIER DEVIATION (N-VHS CARRIER)
37
48
36
1
IC101
25
12
24
13
CARRIER DEVIATION (S-VHS DEVIATION)
IC202
9
1
10
18
RV104
RV108
RV109
WHITE CLIP
DARK CLIP
RV107
CARRIER DEVIATION (S-VHS CARRIER)
RV103
RV102
CARRIER DEVIATION(N-VHS DEVIATION)
RV201
SUB-EMPHASIS LIMITER BALANCE
RV202
SUB-EMPHASIS LEVEL

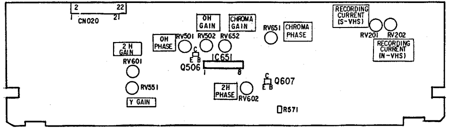
YC-93 BOARD (COMPONENT SIDE)


RV302
CNR
RV303
CV501
X'tal OSC
EQUALIZER 3
EQUALIZER 2
RV003
CV003
RV002
CV002
RV001
EQUALIZER 1
CV001
R083
C033
C024
BCE
Q020
15
1
IC301
16
30
R377
Q032
RV301
PLAYBACK Y LEVEL
RV304
YNR
CN040
10
2
9
1
B
10
2
A
9
1
RV501
RECORDING CHROMA
RV004
Y LEVEL

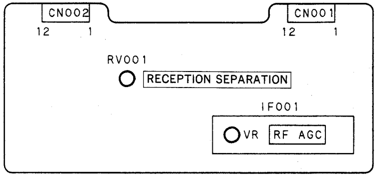
HF-9 BOARD (COMPONENT SIDE)


RV004
PLAYBACK LEVEL-R
RV002
VCO fo
RV003
AFM DEVIATION
RV009
JW030
IC002
16
30
15
11
3
1
RV007
PLAYBACK LEVEL-L
RV008
VCO fo
SWITCHING PULSE POSITION
CN002
3
4
CN001
1
4
5
15
RV005
PB RF LEVEL
RV006
30
16

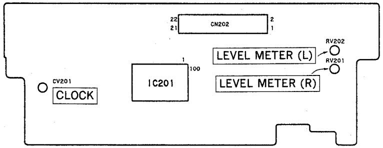
LR-10 BOARD (COMPONENT SIDE)


2
22
1
CN020
21
0H GAIN
CHROMA GAIN
RV651
CHROMA PHASE
RECORDING CURRENT (S-VHS)
RV201
RV202
RECORDING CURRENT (N-VHS)
2H GAIN
0H PHASE
RV501
RV502
RV652
RV601
IC651
Q506
1
8
RV551
Y GAIN
2H PHASE
RV602
Q607
R571

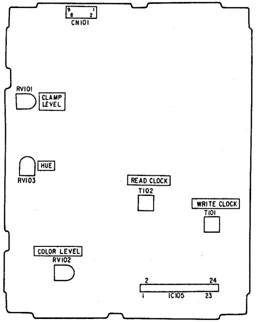
TU-120 BOARD (COMPONENT SIDE)


CN002
12
1
CN001
12
1
RV001
RECEPTION SEPARATION
IF001
VR
RF AGC

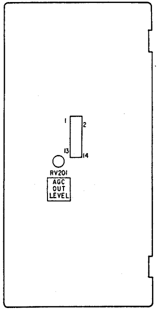
MF-94 BOARD (CONDUCTOR SIDE)


22
21
CN202
2
1
RV202
LEVEL METER (L)
RV201
1
100
CV201
CLOCK
IC201
LEVEL METER (R)

DG-10 BOARD (COMPONENT SIDE)


9
1
8
2
CN101
RV101
CLAMP LEVEL
HUE
RV103
READ CLOCK
T102
WRITE CLOCK
T101
COLOR LEVEL
RV102
2
24
1
IC105
23

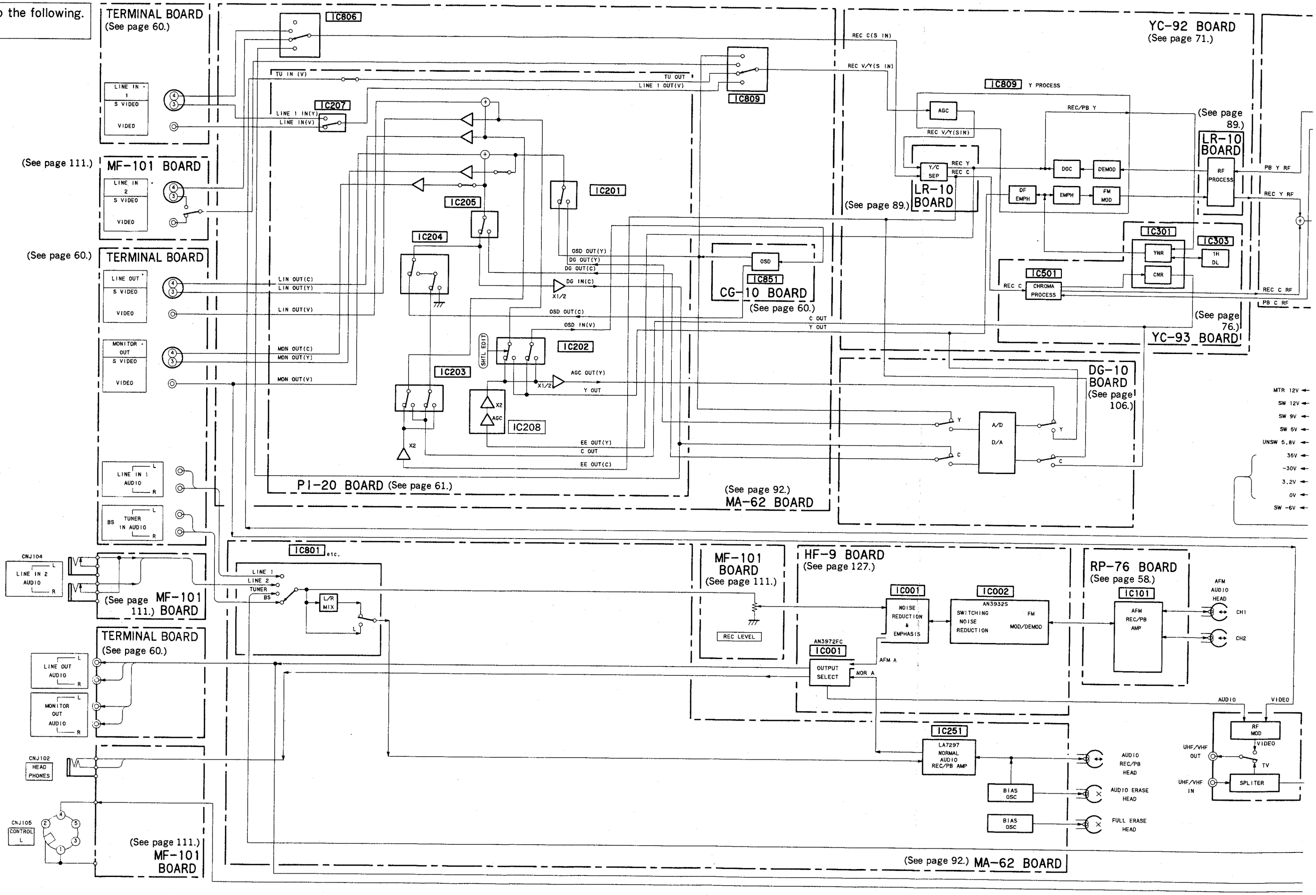
PI-20 BOARD (COMPONENT SIDE)

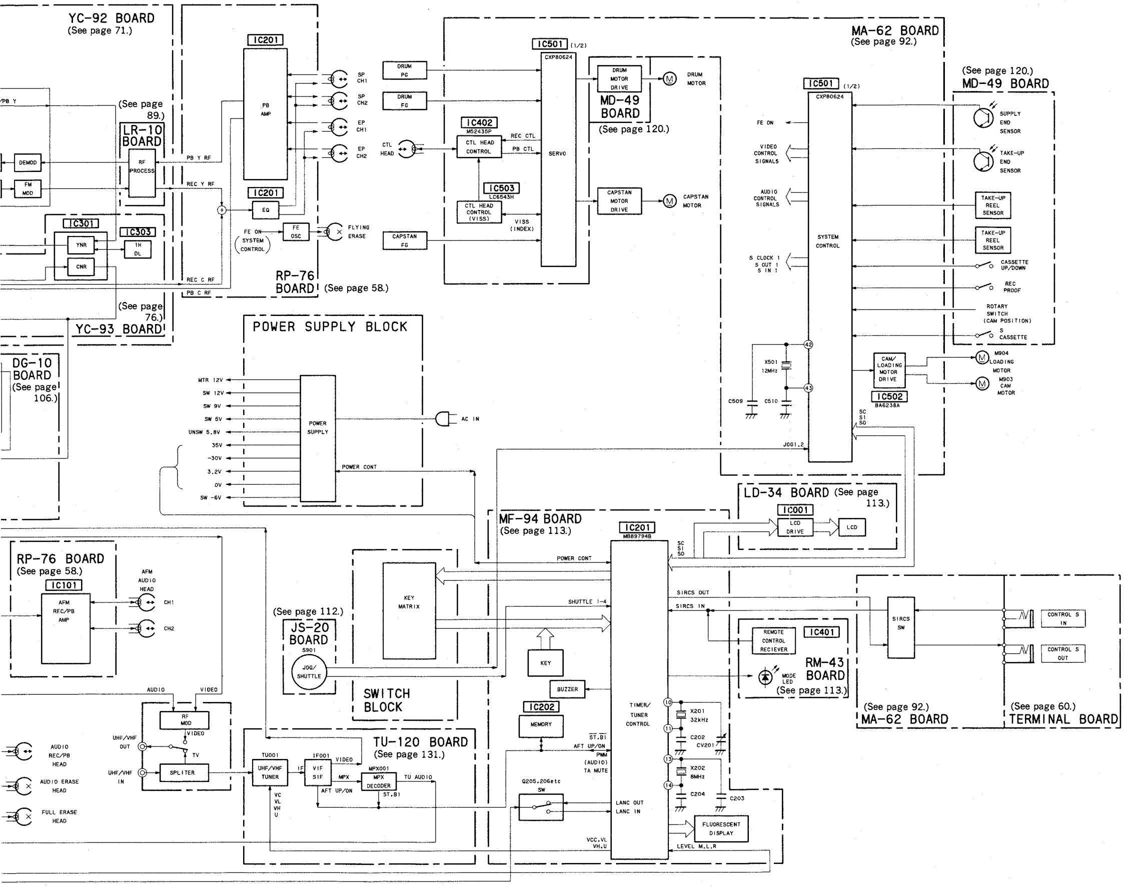

1
2
13
14
RV201
AGC OUT LEVEL

SECTION 2
DIAGRAMS

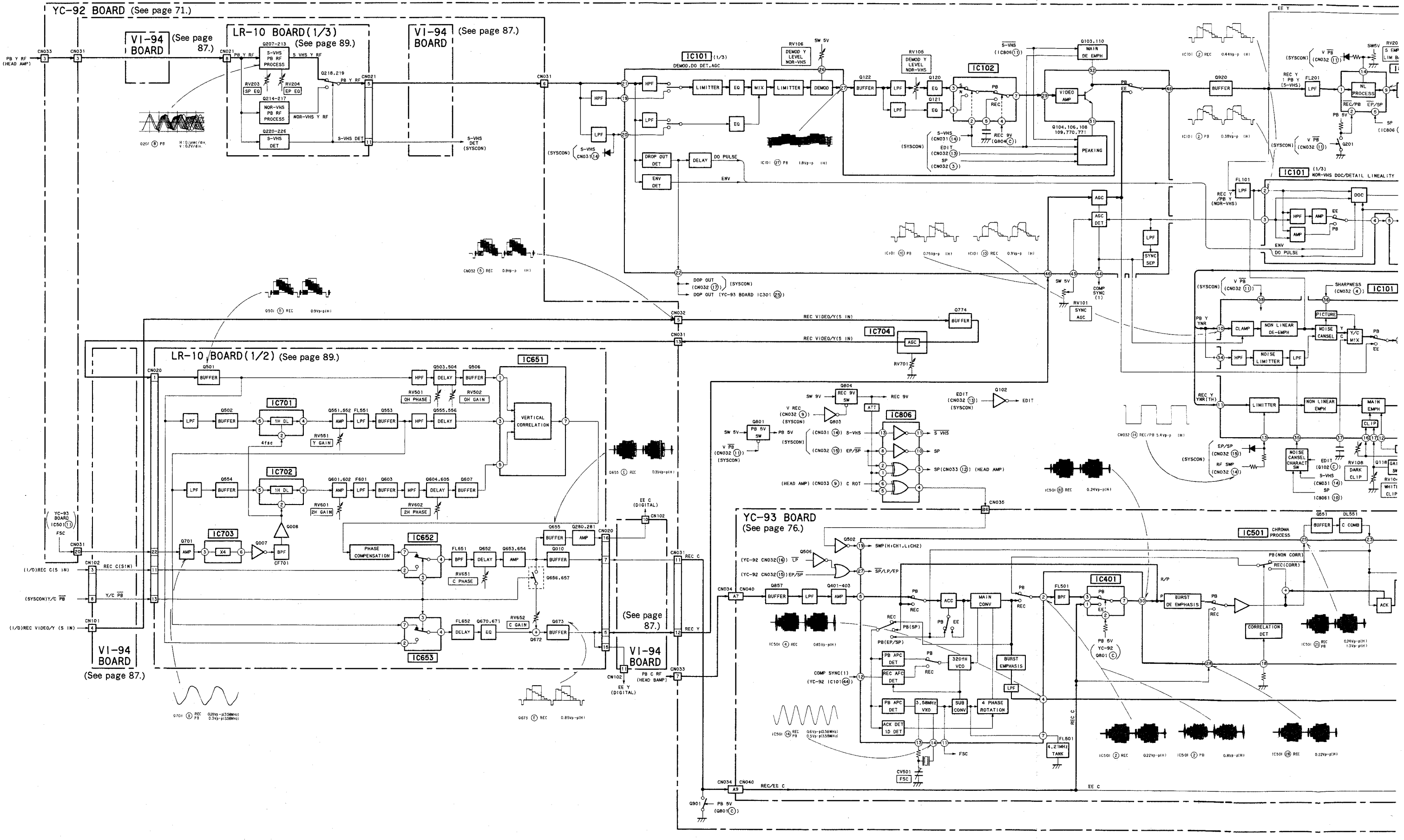
2-1. OVERALL BLOCK DIAGRAM

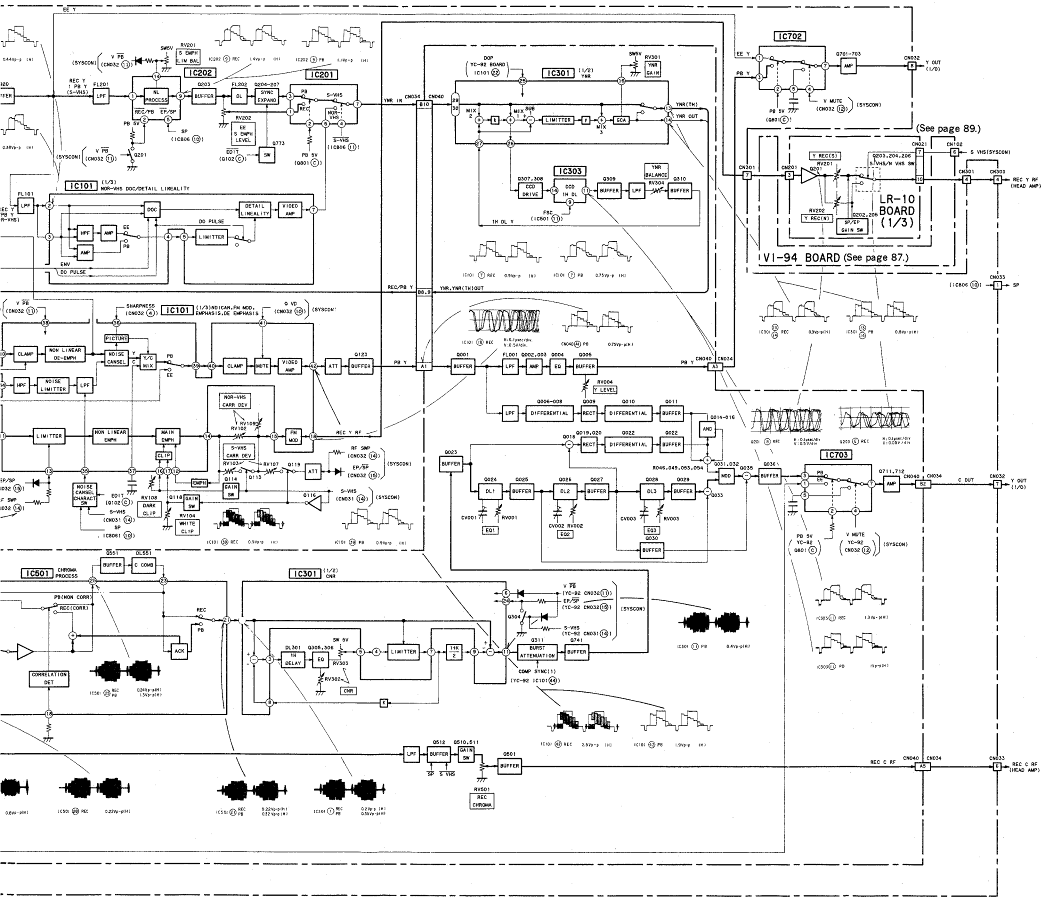
- In case of page reference, pay attention to the following.
  ( ): Page of SERVICE MANUAL unit.


TERMINAL BOARD (See page 60.)
LINE IN 1 S VIDEO
VIDEO
(See page 111.) MF-101 BOARD
LINE IN 2 S VIDEO
VIDEO
(See page 60.) TERMINAL BOARD
LINE OUT S VIDEO
VIDEO
MONITOR OUT S VIDEO
VIDEO
LINE IN 1 AUDIO L R
BS TUNER IN AUDIO L R
CNJ104 LINE IN 2 AUDIO L R
(See page 111.) MF-101 BOARD
TERMINAL BOARD (See page 60.)
LINE OUT AUDIO L R
MONITOR OUT AUDIO L R
CNJ102 HEAD PHONES
CNJ105 CONTROL L
(See page 111.) MF-101 BOARD
IC806
IC207
LINE 1 IN(Y)
LINE IN(V)
TU IN (V)
TU OUT
LINE 1 OUT(V)
IC809
REC C(S IN)
REC V/Y(S IN)
IC205
IC201
IC204
LIN OUT(C)
LIN OUT(Y)
LIN OUT(V)
MON OUT(C)
MON OUT(Y)
MON OUT(V)
OSD OUT(Y)
DG OUT(Y)
DG OUT(C)
DG IN(C)
X1/2
OSD OUT(C)
OSD IN(V)
C OUT
Y OUT
SHTL EDIT
IC202
IC203
AGC OUT(Y)
X1/2
Y OUT
X2
AGC
IC208
EE OUT(Y)
C OUT
EE OUT(C)
X2
OSD
IC851
CG-10 BOARD
(See page 60.)
PI-20 BOARD (See page 61.)
(See page 92.) MA-62 BOARD
YC-92 BOARD (See page 71.)
IC809 Y PROCESS
AGC
REC V/Y(S IN)
Y/C SEP
REC Y
REC C
(See page 89.) LR-10 BOARD
REC/PB Y
DOC
DEMOD
DF EMPH
EMPH
FM MOD
(See page 89.) LR-10 BOARD
RF PROCESS
PB Y RF
REC Y RF
IC301
IC303
YNR
1H DL
CNR
IC501
REC C
CHROMA PROCESS
REC C RF
PB C RF
(See page 76.) YC-93 BOARD
DG-10 BOARD (See page 106.)
Y
A/D
D/A
Y
C
C
MTR 12V
SW 12V
SW 9V
SW 5V
UNSW 5.8V
35V
-30V
3.2V
0V
SW -6V
IC801 etc.
LINE 1
LINE 2
TUNER
BS
L/R MIX
L
MF-101 BOARD (See page 111.)
REC LEVEL
HF-9 BOARD (See page 127.)
IC001
NOISE REDUCTION & EMPHASIS
IC002
AN3932S
SWITCHING NOISE REDUCTION
FM MOD/DEMOD
AN3972FC
IC001
OUTPUT SELECT
AFM A
NOR A
RP-76 BOARD (See page 58.)
IC101
AFM REC/PB AMP
AFM AUDIO HEAD
CH1
CH2
AUDIO
VIDEO
RF MOD
VIDEO
TV
UHF/VHF OUT
UHF/VHF IN
SPLITER
IC251
LA7297 NORMAL AUDIO REC/PB AMP
BIAS OSC
BIAS OSC
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
(See page 92.) MA-62 BOARD

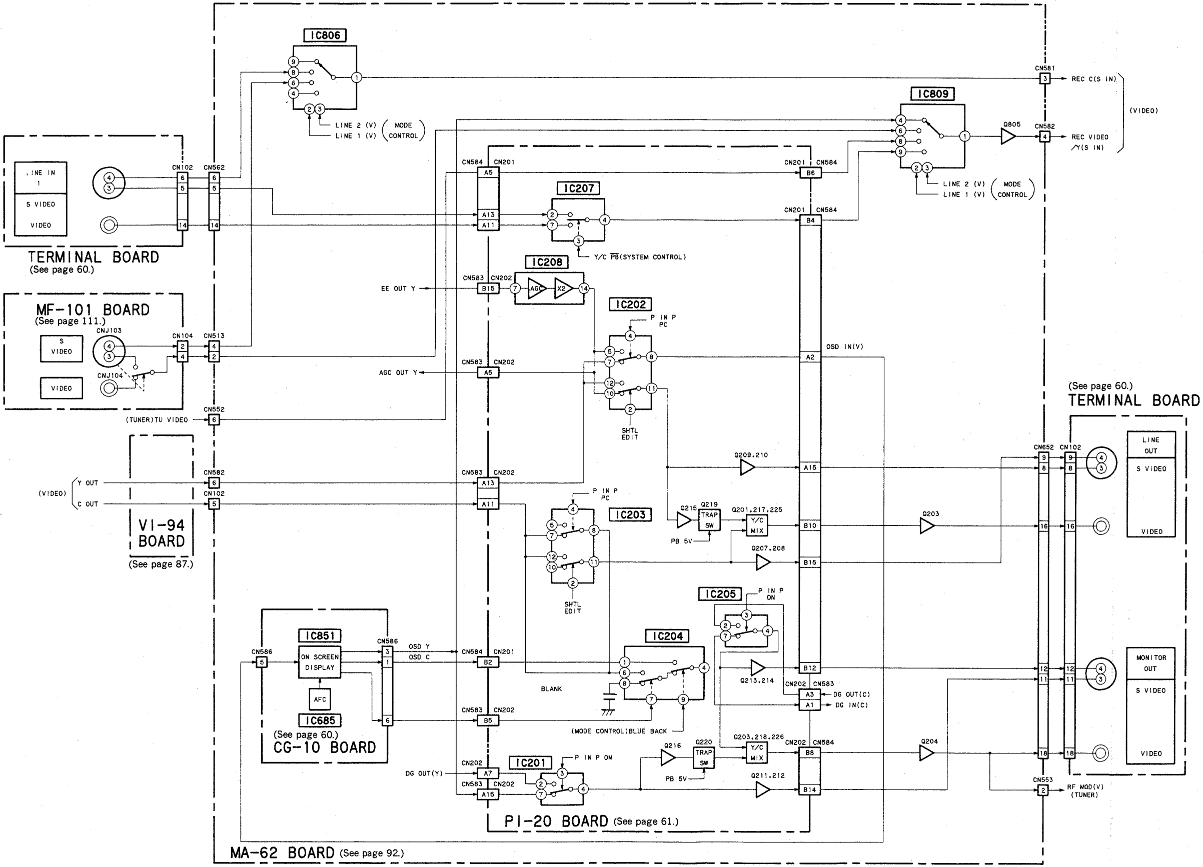

YC-92 BOARD
(See page 71.)
IC201
PB AMP
SP CH1
SP CH2
EP CH1
EP CH2
IC201
EQ
FE OSC
FE ON (SYSTEM CONTROL)
FLYING ERASE
RP-76 BOARD (See page 58.)
(See page 89.)
LR-10 BOARD
RF PROCESS
PB Y RF
REC Y RF
REC C RF
PB C RF
DEMOD
FM MOD
IC301
YNR
CNR
IC303
1H DL
(See page 76.)
YC-93 BOARD
DRUM PG
DRUM FG
CAPSTAN FG
CTL HEAD
IC402
M52435P
CTL HEAD CONTROL
REC CTL
PB CTL
IC503
LC6543H
CTL HEAD CONTROL (VISS)
VISS (INDEX)
IC501 (1/2)
CXP80624
SERVO
DRUM MOTOR DRIVE
DRUM MOTOR
MD-49 BOARD
(See page 120.)
CAPSTAN MOTOR DRIVE
CAPSTAN MOTOR
MA-62 BOARD
(See page 92.)
IC501 (1/2)
CXP80624
SYSTEM CONTROL
FE ON
VIDEO CONTROL SIGNALS
AUDIO CONTROL SIGNALS
S CLOCK 1
S OUT 1
S IN 1
X501 12MHz
C509
C510
JOG1,2
SC SI SO
CAM/LOADING MOTOR DRIVE
IC502
BA6238A
M904 LOADING MOTOR
M903 CAM MOTOR
(See page 120.)
MD-49 BOARD
SUPPLY END SENSOR
TAKE-UP END SENSOR
TAKE-UP REEL SENSOR
TAKE-UP REEL SENSOR
CASSETTE UP/DOWN
REC PROOF
ROTARY SWITCH (CAM POSITION)
S CASSETTE
POWER SUPPLY BLOCK
POWER SUPPLY
AC IN
MTR 12V
SW 12V
SW 9V
SW 5V
UNSW 5.8V
35V
-30V
3.2V
0V
SW -6V
POWER CONT
DG-10 BOARD
(See page 106.)
RP-76 BOARD
(See page 58.)
IC101
AFM REC/PB AMP
AFM AUDIO HEAD
CH1
CH2
AUDIO
VIDEO
RF MOD
VIDEO
TV
SPLITER
UHF/VHF OUT
UHF/VHF IN
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
LD-34 BOARD (See page 113.)
IC001
LCD DRIVE
LCD
MF-94 BOARD
(See page 113.)
IC201
MB89794B
TIMER/TUNER CONTROL
SC SI SO
POWER CONT
SHUTTLE 1-4
SIRCS OUT
SIRCS IN
KEY MATRIX
(See page 112.)
JS-20 BOARD
S901
JOG/SHUTTLE
SWITCH BLOCK
KEY
BUZZER
IC202
MEMORY
ST.BI
AFT UP/ON
PWM (AUDIO)
TA MUTE
Q205,206etc SW
LANC OUT
LANC IN
VCC,VL VH,U
LEVEL M,L,R
FLUORESCENT DISPLAY
X201 32kHz
C202
CV201
X202 8MHz
C204
C203
REMOTE CONTROL RECIEVER
IC401
MODE LED
RM-43 BOARD
(See page 113.)
TU-120 BOARD
(See page 131.)
TU001
UHF/VHF TUNER
IF
IF001
VIF SIF
VIDEO
MPX
MPX001
MPX DECODER
TU AUDIO
AFT UP/ON
ST.BI
VC VL VH U
SIRCS SW
CONTROL S IN
CONTROL S OUT
(See page 92.)
MA-62 BOARD
(See page 60.)
TERMINAL BOARD

2-2. VIDEO BLOCK DIAGRAM

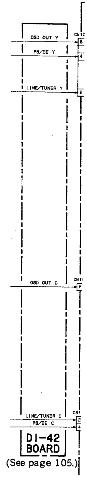

YC-92 BOARD (See page 71.)
VI-94 BOARD (See page 87.)
LR-10 BOARD(1/3) (See page 89.)
VI-94 BOARD (See page 87.)
S-VHS PB RF PROCESS
NOR-VHS PB RF PROCESS
S-VHS DET
RV203 SP EQ
RV204 EP EQ
PB Y RF (HEAD AMP)
S-VHS DET (SYSCON)
IC101 (1/3) DEMOD.DO DET.AGC
HPF
LPF
LIMITTER
EQ
MIX
DEMOD
DROP OUT DET
DELAY
DO PULSE
ENV DET
ENV
RV106 DEMOD Y LEVEL NOR-VHS
RV105 DEMOD Y LEVEL NOR-VHS
SW 5V
Q122 BUFFER
IC102
Q120 EQ
Q121 EQ
Q103,110 MAIN DE EMPH
VIDEO AMP
Q104,106,108 109,770,771
PEAKING
S-VHS (IC806 ⑪)
Q920 BUFFER
AGC
AGC DET
LPF
SYNC SEP
COMP SYNC (1)
RV101 SYNC AGC
DOP OUT (CN032 ⑰) (SYSCON)
DOP OUT (YC-93 BOARD IC301 ㉓)
REC VIDEO/Y(S IN)
Q774 BUFFER
IC704 AGC
RV701
LR-10 BOARD(1/2) (See page 89.)
Q501 BUFFER
IC651 VERTICAL CORRELATION
Q503,504 DELAY
Q506 BUFFER
RV501 OH PHASE
RV502 OH GAIN
IC701 1H DL
IC702 1H DL
Q502 BUFFER
Q554 BUFFER
Q551,552 AMP
FL551 LPF
Q553 BUFFER
Q555,556 DELAY
RV551 Y GAIN
4fsc
Q601,602 AMP
F601 LPF
Q603 BUFFER
Q604,605 DELAY
Q607 BUFFER
RV601 2H GAIN
RV602 2H PHASE
Q008
IC703 X4
Q701 AMP
Q007
CF701 BPF
PHASE COMPENSATION
IC652
FL651 BPF
Q652 DELAY
Q653,654 AMP
RV651 C PHASE
Q655 BUFFER
Q280,281 AMP
Q010 BUFFER
Q656,657
IC653
FL652 DELAY
Q670,671 EQ
RV652 C GAIN
Q672
Q673 BUFFER
EE C (DIGITAL)
EE Y (DIGITAL)
PB C RF (HEAD AMP)
VI-94 BOARD (See page 87.)
(See page 87.)
(I/O)REC C(S IN)
(SYSCON)Y/C PB
(I/O)REC VIDEO/Y (S IN)
YC-93 BOARD (IC501 ⑪) FSC
REC C
REC Y
Q804 REC 9V SW
Q801 PB 5V SW
Q803
IC806
S VHS
SP
SP(CN033 ⑫) (HEAD AMP)
C ROT
EDIT (CN032 ⑬) (SYSCON)
Q102 EDIT
YC-93 BOARD (See page 76.)
Q502 SWP(H:CH1,L:CH2)
Q506 SP/LP/EP
Q857 BUFFER
Q401-403 AMP
ACC
MAIN CONV
IC401
FL501 BPF
BURST DE EMPHASIS
CORRELATION DET
ACK
PB APC DET
REC AFC DET
320fH VCO
BURST EMPHASIS
PB APC DET
3.58MHz VXO
SUB CONV
4 PHASE ROTATION
ACK DET 1D DET
FL501 4.21MHz TANK
CV501 FSC
COMP SYNC(1) (YC-92 IC101㊹)
REC/EE C
EE C
Q901 PB 5V (Q801 ⓒ)
IC501 CHROMA PROCESS
Q551 BUFFER
DL551 C COMB
IC101 (1/3) NOR-VHS DOC/DETAIL LINEALITY
FL101 LPF
DOC
HPF
AMP
FL201 LPF
NL PROCESS
REC/PB EP/SP
Q201
SHARPNESS (CN032 ④)
IC101
PICTURE
CLAMP
NON LINEAR DE-EMPH
NOISE CANSEL
Y/C MIX
NOISE LIMITTER
LIMITTER
NON LINEAR EMPH
MAIN EMPH
CLIP
NOISE CANSEL CHARACT SW
RV108 DARK CLIP
EP/SP (CN032 ⑮)
RF SWP (CN032 ⑭)
EDIT (Q102 ⓒ)
S-VHS (CN031 ⑭)
SP IC806 ⑩
IC101 ⑦ PB 1.8Vp-p (H)
IC101 ② REC 0.44Vp-p (H)
IC101 ② PB 0.38Vp-p (H)
IC101 ⑩ PB 0.75Vp-p (H)
IC101 ⑩ REC 0.9Vp-p (H)
CN032 ⑤ REC 0.9Vp-p (H)
Q501 ⑤ REC 0.9Vp-p(H)
Q207 Ⓑ PB H:0.1msec/div. V:0.2V/div.
Q655 Ⓔ REC 0.35Vp-p(H)
Q701 Ⓑ REC PB 0.28Vp-p(3.58MHz) 0.3Vp-p(3.58MHz)
Q673 Ⓔ REC 0.85Vp-p(H)
CN032 ⑭ REC/PB 5.4Vp-p (H)
IC501 ㉝ REC 0.24Vp-p(H)
IC501 ④ REC 0.65Vp-p(H)
IC501 ⑭ REC PB 0.6Vp-p(3.58MHz) 0.5Vp-p(3.58MHz)
IC501 ② REC 0.22Vp-p(H)
IC501 ② PB 0.8Vp-p(H)
IC501 ㉘ REC 0.22Vp-p(H)
IC501 ㉕ REC PB 0.24Vp-p(H) 1.3Vp-p(H)


EE Y
IC702
IC202
IC201
IC301 (1/2) YNR
IC303
IC101 (1/3) NOR-VHS DOC/DETAIL LINEALITY
IC101 (1/3) NOICAN.FM MOD. EMPHASIS.DE EMPHASIS
IC501 CHROMA PROCESS
IC301 (1/2) CNR
IC703
LR-10 BOARD (1/3)
VI-94 BOARD (See page 87.)
(See page 89.)
NL PROCESS
BUFFER
DL
SYNC EXPAND
S EMPH LIM BAL
EE S EMPH LEVEL
LIMITTER
GCA
CCD DRIVE
CCD 1H DL
YNR BALANCE
YNR GAIN
DOC
DETAIL LINEALITY
VIDEO AMP
HPF
AMP
LPF
DO PULSE
PICTURE
NOISE CANSEL
Y/C MIX
CLAMP
MUTE
NON LINEAR DE-EMPH
NOISE LIMITTER
ATT
NOR-VHS CARR DEV
S-VHS CARR DEV
NON LINEAR EMPH
MAIN EMPH
CLIP
FM MOD
EMPH
GAIN SW
DARK CLIP
WHITE CLIP
NOISE CANSEL CHARACT SW
DIFFERENTIAL
RECT
AND
EQ
DL1
DL2
DL3
MOD
Y LEVEL
C COMB
ACK
CORRELATION DET
1H DELAY
CNR
BURST ATTENUATION
REC CHROMA
YNR IN
YNR(TH)
YNR OUT
YNR,YNR(TH)OUT
REC/PB Y
PB Y
REC Y RF
Y OUT (1/0)
C OUT (1/0)
REC Y RF (HEAD AMP)
REC C RF (HEAD AMP)
REC C RF
S VHS(SYSCON)
SP
V MUTE
(SYSCON)
CN032
CN034
CN040
CN033
CN301
CN303
CN201
CN021
CN102
COMP SYNC(1) (YC-92 IC101 44)
PB 5V
SW5V
SW 5V
RV201
RV202
RV301
RV304
RV004
RV001
RV002
RV003
RV102
RV103
RV107
RV108
RV104
RV109
RV302
RV303
RV501
Q001
Q002,003
Q004
Q005
Q006-008
Q009
Q010
Q011
Q014-016
Q018
Q019,020
Q022
Q023
Q024
Q025
Q026
Q027
Q028
Q029
Q030
Q031,032
Q033
Q035
Q036
Q113
Q114
Q116
Q118
Q119
Q123
Q201
Q203
Q204-207
Q304
Q305,306
Q307,308
Q309
Q310
Q311
Q501
Q510,511
Q512
Q551
Q701-703
Q711,712
Q741
Q773
DL301
DL551
FL101
FL201
FL202
FL001
IC301 13 REC 0.9Vp-p(H)
IC301 13 PB 0.8Vp-p(H)
IC101 7 REC 0.9Vp-p (H)
IC101 7 PB 0.75Vp-p (H)
IC101 18 REC
IC101 39 REC 0.9Vp-p (H)
IC101 39 PB 0.9Vp-p (H)
IC101 42 REC 2.5Vp-p (H)
IC101 42 PB 1.9Vp-p (H)
IC303 11 REC 1.3Vp-p(H)
IC303 11 PB 1Vp-p(H)
IC301 1 PB 0.4Vp-p(H)
IC501 28 REC 0.22Vp-p(H)
IC501 25 REC PB 0.24Vp-p(H) 1.3Vp-p(H)
IC202 9 REC 1.4Vp-p (H)
IC202 9 PB 1.1Vp-p (H)

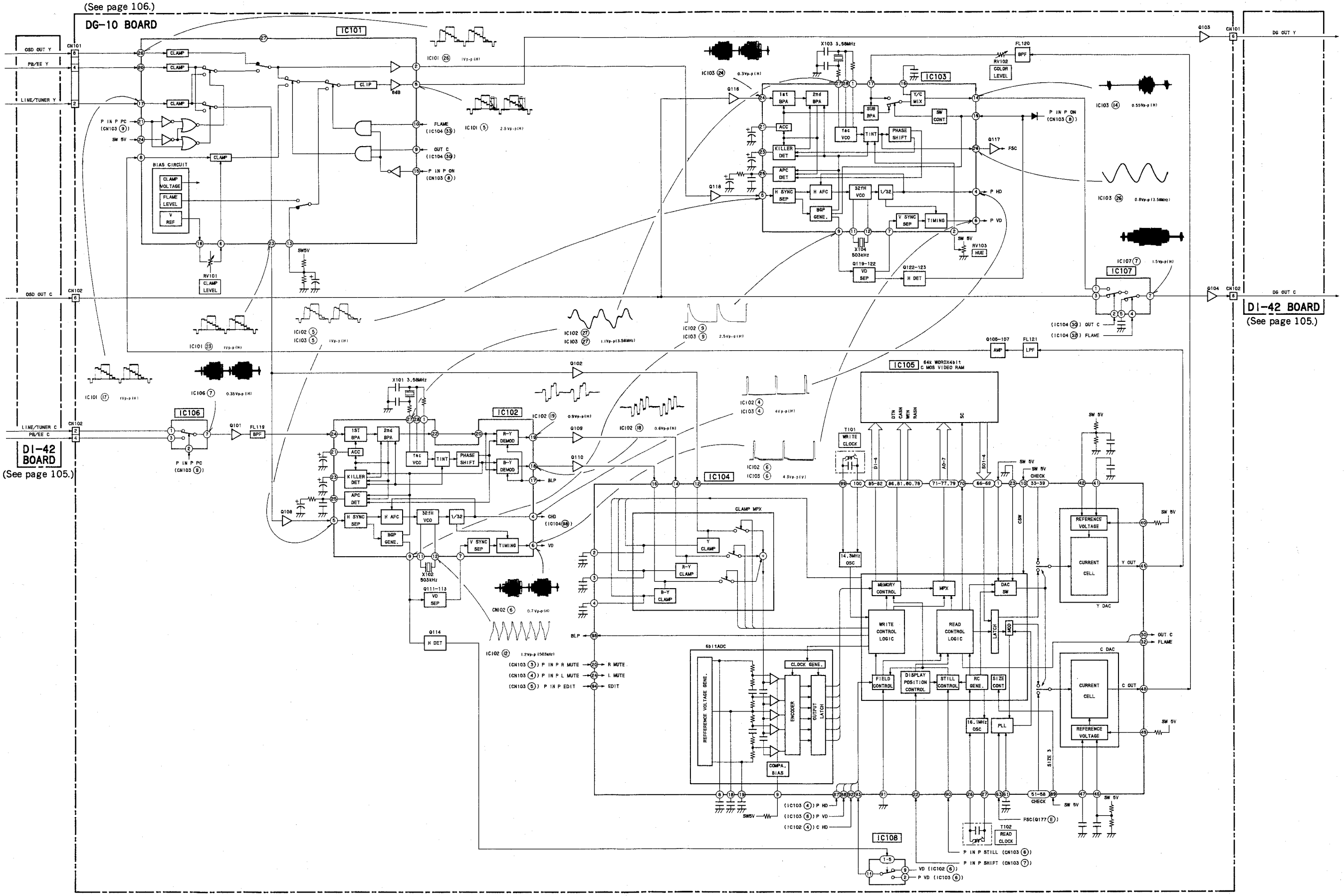
2-3. VIDEO IN/OUT BLOCK DIAGRAM


IC806
LINE 2 (V)
LINE 1 (V)
MODE CONTROL
CN581
REC C(S IN)
(VIDEO)
IC809
Q805
CN582
REC VIDEO /Y(S IN)
LINE 2 (V)
LINE 1 (V)
MODE CONTROL
LINE IN 1
S VIDEO
VIDEO
TERMINAL BOARD
(See page 60.)
CN102
CN562
CN584
CN201
A5
A13
A11
B6
B4
IC207
Y/C PB(SYSTEM CONTROL)
IC208
AGC
X2
EE OUT Y
CN583
CN202
B15
IC202
P IN P PC
SHTL EDIT
AGC OUT Y
OSD IN(V)
A2
MF-101 BOARD
(See page 111.)
CNJ103
CNJ104
S VIDEO
VIDEO
CN104
CN513
CN552
(TUNER)TU VIDEO
(See page 60.)
TERMINAL BOARD
LINE OUT
S VIDEO
VIDEO
CN652
Y OUT
C OUT
(VIDEO)
VI-94 BOARD
(See page 87.)
Q209,210
A15
IC203
P IN P PC
Q215
Q219
TRAP SW
PB 5V
Q201,217,225
Y/C MIX
B10
Q203
Q207,208
B15
SHTL EDIT
IC205
P IN P ON
IC851
ON SCREEN DISPLAY
AFC
IC685
(See page 60.)
CG-10 BOARD
CN586
OSD Y
OSD C
B2
B5
IC204
BLANK
(MODE CONTROL)BLUE BACK
Q213,214
B12
A3
A1
DG OUT(C)
DG IN(C)
MONITOR OUT
S VIDEO
VIDEO
Q216
Q220
TRAP SW
PB 5V
Q203,218,226
Y/C MIX
B8
Q204
DG OUT(Y)
A7
A15
IC201
P IN P ON
Q211,212
B14
CN553
RF MOD(V) (TUNER)
PI-20 BOARD (See page 61.)
MA-62 BOARD (See page 92.)

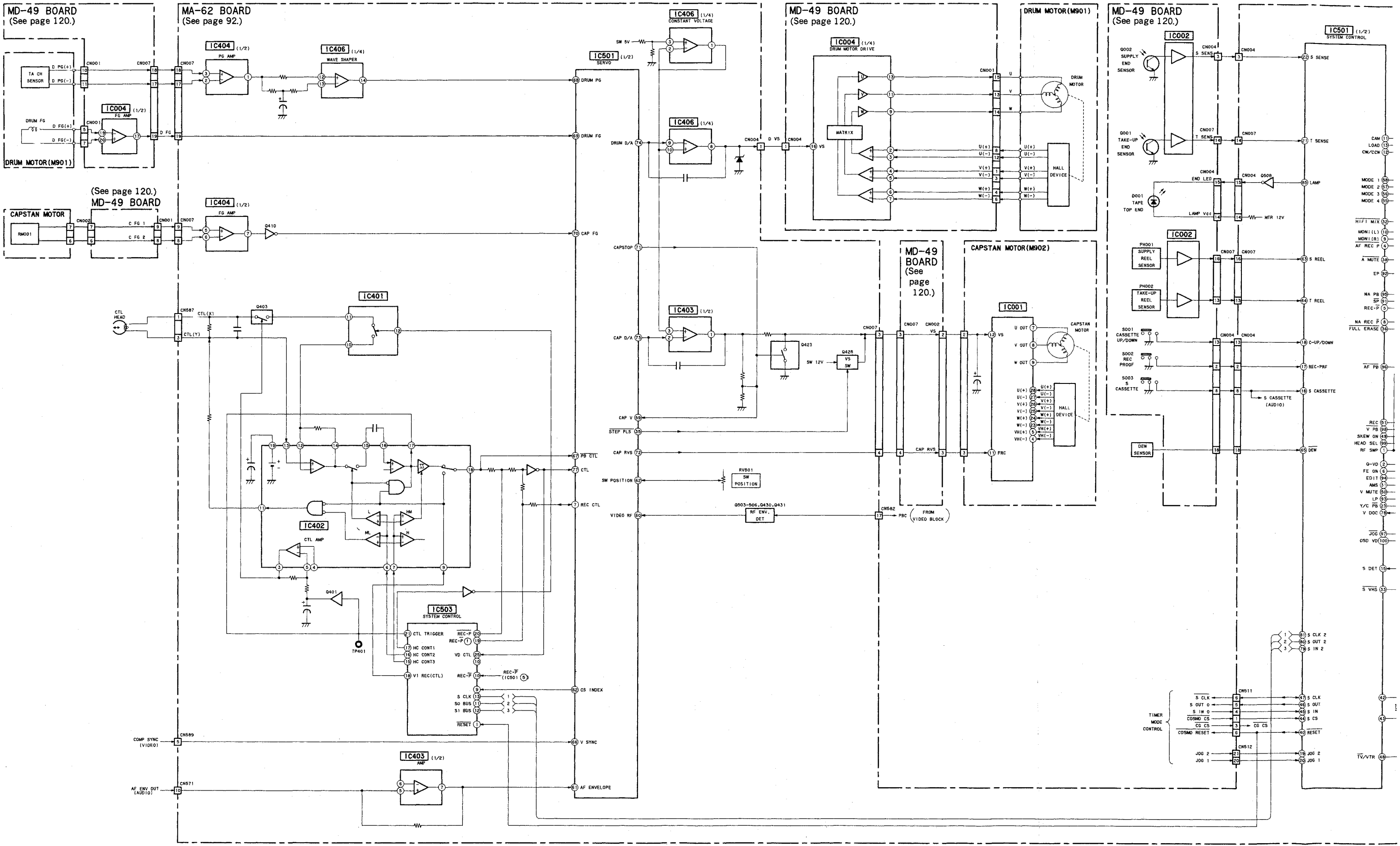
2-4. P IN P

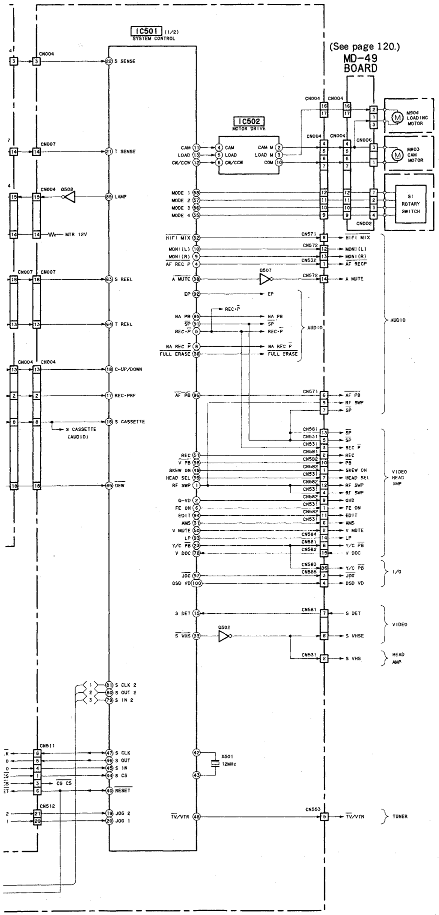

OSD OUT Y
PB/EE Y
LINE/TUNER Y
OSD OUT C
LINE/TUNER C
PB/EE C
DI-42 BOARD
(See page 105.)

2-4. P IN P BLOCK DIAGRAM


(See page 106.)
DG-10 BOARD
IC101
CN101
OSD OUT Y
PB/EE Y
LINE/TUNER Y
P IN P PC (CN103 ⑨)
SW 5V
CLAMP
CLIP
6dB
BIAS CIRCUIT
CLAMP VOLTAGE
FLAME LEVEL
V REF
RV101 CLAMP LEVEL
FLAME (IC104 ㉝)
OUT C (IC104 ㉚)
P IN P ON (CN103 ⑧)
IC101 ㉖ 1Vp-p(H)
IC101 ⑤ 2.5Vp-p(H)
IC101 ㉓ 1Vp-p(H)
IC101 ⑰ 1Vp-p(H)
CN102
OSD OUT C
LINE/TUNER C
PB/EE C
DI-42 BOARD
(See page 105.)
IC106
IC106 ⑦ 0.35Vp-p(H)
Q101
FL119 BPF
P IN P PC (CN103 ⑨)
IC102
X101 3.58MHz
1ST BPA
2nd BPA
ACC
KILLER DET
APC DET
H SYNC SEP
fsc VCO
TINT
PHASE SHIFT
R-Y DEMOD
B-Y DEMOD
H AFC
BGP GENE.
32fH VCO
1/32
V SYNC SEP
TIMING
X102 503kHz
Q111-113 VD SEP
Q114 H DET
Q108
Q102
Q109
Q110
BLP
CHD (IC104 ㊳)
VD
IC102 ⑲ 0.9Vp-p(H)
IC102 ⑱ 0.6Vp-p(H)
CN102 ⑥ 0.7Vp-p(H)
IC102 ⑫ 1.2Vp-p(503kHz)
IC102 ⑤
IC103 ⑤ 1Vp-p(H)
IC102 ㉗
IC103 ㉗ 1.1Vp-p(3.58MHz)
IC102 ⑨
IC103 ⑨ 2.5Vp-p(H)
IC102 ④
IC103 ④ 4Vp-p(H)
IC102 ⑥
IC103 ⑥ 4.3Vp-p(V)
IC103
X103 3.58MHz
Q116
Q118
IC103 ㉔ 0.3Vp-p(H)
SUB BPA
Y/C MIX
SW CONT
FL120 BPF
RV102 COLOR LEVEL
P IN P ON (CN103 ⑧)
Q117
FSC
P HD
P VD
SW 5V
RV103 HUE
X104 503kHz
Q119-122 VD SEP
Q122-123 H DET
IC103 ⑭ 0.55Vp-p(H)
IC103 ㉖ 0.8Vp-p(3.58MHz)
IC107 ⑦ 1.5Vp-p(H)
IC107
(IC104 ㉚) OUT C
(IC104 ㉜) FLAME
Q103
Q104
DG OUT Y
DG OUT C
DI-42 BOARD
(See page 105.)
Q105-107 AMP
FL121 LPF
IC105 64K WORDx4bit C MOS VIDEO RAM
DIN
CASN
WEN
RASN
SC
D1-4
A0-7
SO1-4
T101 WRITE CLOCK
IC104
CLAMP MPX
Y CLAMP
R-Y CLAMP
B-Y CLAMP
14.3MHz OSC
MEMORY CONTROL
MPX
DAC SW
WRITE CONTROL LOGIC
READ CONTROL LOGIC
LATCH
MOD
6bitADC
REFERENCE VOLTAGE GENE.
CLOCK GENE.
ENCODER
OUTPUT LATCH
COMPA. BIAS
FIELD CONTROL
DISPLAY POSITION CONTROL
STILL CONTROL
RC GENE.
SIZE CONT
16.1MHz OSC
PLL
REFERENCE VOLTAGE
CURRENT CELL
Y DAC
C DAC
Y OUT
C OUT
OUT C
FLAME
CHECK
SIZE 3
CSW
(CN103 ③) P IN P R MUTE → R MUTE
(CN103 ④) P IN P L MUTE → L MUTE
(CN103 ⑤) P IN P EDIT → EDIT
(IC103 ④) P HD
(IC103 ⑥) P VD
(IC102 ④) C HD
FSC(Q117 Ⓔ)
T102 READ CLOCK
P IN P STILL (CN103 ⑥)
P IN P SHIFT (CN103 ⑦)
IC108
VD (IC102 ⑥)
P VD (IC103 ⑥)

2-5. SERVO/SYSTEM CONTROL BLOCK DIAGRAM


MD-49 BOARD
(See page 120.)
MA-62 BOARD
(See page 92.)
MD-49 BOARD
(See page 120.)
DRUM MOTOR(M901)
MD-49 BOARD
(See page 120.)
TA CH SENSOR
D PG(+)
D PG(-)
DRUM FG
D FG(+)
D FG(-)
IC004 (1/2) FG AMP
CN001
CN007
D FG
DRUM MOTOR(M901)
(See page 120.)
MD-49 BOARD
CAPSTAN MOTOR
RM001
CN002
C FG 1
C FG 2
IC404 (1/2) PG AMP
IC406 (1/4) WAVE SHAPER
IC404 (1/2) FG AMP
Q410
IC406 (1/4) CONSTANT VOLTAGE
SW 5V
IC406 (1/4)
IC501 (1/2) SERVO
DRUM PG
DRUM FG
DRUM D/A
CAP FG
CAPSTOP
CAP D/A
CAP V
STEP PLS
CAP RVS
SW POSITION
VIDEO RF
IC403 (1/2)
Q423
Q428
SW 12V
VS SW
RV501 SW POSITION
Q503-506,Q430,Q431 RF ENV. DET
CN582
PBC
FROM VIDEO BLOCK
D VS
CN004
IC004 (1/4) DRUM MOTOR DRIVE
MATRIX
U
V
W
U(+)
U(-)
V(+)
V(-)
W(+)
W(-)
DRUM MOTOR
HALL DEVICE
MD-49 BOARD (See page 120.)
CN007
CN002
CAPSTAN MOTOR(M902)
IC001
U OUT
V OUT
W OUT
VS
FRC
CAPSTAN MOTOR
VH(+)
VH(-)
HALL DEVICE
CAP RVS
CTL HEAD
CN587
CTL(X)
CTL(Y)
Q403
IC401
IC402 CTL AMP
PB CTL
CTL
REC CTL
Q401
TP401
IC503 SYSTEM CONTROL
CTL TRIGGER
HC CONT1
HC CONT2
HC CONT3
V1 REC(CTL)
REC•P
VD CTL
REC•P (IC501 ⑤)
S CLK
S0 BUS
S1 BUS
RESET
CS INDEX
V SYNC
AF ENVELOPE
COMP SYNC (VIDEO)
CN589
AF ENV OUT (AUDIO)
CN571
IC403 (1/2) AMP
IC002
Q002 SUPPLY END SENSOR
Q001 TAKE-UP END SENSOR
S SENS
T SENS
END LED
Q508
D001 TAPE TOP END
LAMP Vcc
MTR 12V
PH001 SUPPLY REEL SENSOR
PH002 TAKE-UP REEL SENSOR
S001 CASSETTE UP/DOWN
S002 REC PROOF
S003 S CASSETTE
DEW SENSOR
S CASSETTE (AUDIO)
IC501 (1/2) SYSTEM CONTROL
S SENSE
T SENSE
LAMP
S REEL
T REEL
C-UP/DOWN
REC•PRF
S CASSETTE
DEW
S CLK 2
S OUT 2
S IN 2
TIMER MODE CONTROL
S CLK
S OUT 0
S IN 0
COSMO CS
CG CS
COSMO RESET
CN511
CN512
JOG 2
JOG 1
S CLK
S OUT
S IN
S CS
RESET
CAM
LOAD
CW/CCW
MODE 1
MODE 2
MODE 3
MODE 4
HIFI MIX
MONI(L)
MONI(R)
AF REC P
A MUTE
EP
NA PB
SP
REC•P
NA REC P
FULL ERASE
AF PB
REC
V PB
SKEW ON
HEAD SEL
RF SWP
Q-VD
FE ON
EDIT
AMS
V MUTE
LP
Y/C PB
V DOC
JOG
OSD VD
S DET
S VHS
TV/VTR


IC501 (1/2)
SYSTEM CONTROL
(See page 120.)
MD-49
BOARD
IC502
MOTOR DRIVE
CN004
CN007
CN006
CN002
Q508
Q507
Q502
S SENSE
T SENSE
LAMP
MTR 12V
S REEL
T REEL
C-UP/DOWN
REC•PRF
S CASSETTE
S CASSETTE (AUDIO)
DEW
CAM
LOAD
CW/CCW
CAM M
LOAD M
COM
M904 LOADING MOTOR
M903 CAM MOTOR
S1 ROTARY SWITCH
MODE 1
MODE 2
MODE 3
MODE 4
HIFI MIX
MONI (L)
MONI (R)
AF REC P
A MUTE
CN571
CN572
CN532
AF RECP
EP
NA PB
SP
REC•P
NA REC P
FULL ERASE
AUDIO
AF PB
RF SWP
CN581
CN531
CN582
CN584
CN583
CN585
REC
V PB
PB
SKEW ON
HEAD SEL
Q-VD
QVD
FE ON
EDIT
AMS
V MUTE
LP
Y/C PB
V DOC
VIDEO HEAD AMP
JOG
OSD VD
I/O
S DET
S VHS
S VHSE
VIDEO
HEAD AMP
S CLK 2
S OUT 2
S IN 2
CN511
CN512
S CLK
S OUT
S IN
S CS
CG CS
RESET
JOG 2
JOG 1
X501
12MHz
TV/VTR
CN563
TUNER

2-6. SYSTEM CONTROL — VIDEO BLOCK INTERFACE

Signal Name	Pin No.	I/O	STOP/ FF/REW	TAPE LOADING	TAPE UNLOADING	PB	PB· PAUSE	SLOW	×2	CUE	REVIEW	REC	REC· PAUSE	INSERT	INSERT· PAUSE
V·$\overline{\text{PB}}$	MA-62 BOARD IC501 (98)	O	H	H	H	L	L	L	L	L	L	H	H	H/∗12	H/∗12
HEAD SEL	MA-62 BOARD IC501 (99)	O	L	L	L	L	H	∗1	H	L	L	H	L	H/∗12	L
RF SW P (SW30)	MA-62 BOARD IC501 ①	O	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2
Q VD/V MUTE	MA-62 BOARD IC501 ②	O	L	L	L	∗3	∗4	∗4	∗4	∗4	∗4	L	L	L	L/∗11
FE ON	MA-62 BOARD IC501 ⑥	O	L	L	L	L	L	L	L	L	L	∗5	L	H/∗12	L
EDIT	MA-62 BOARD IC501 (94)	O	L	L	L	∗6	∗6	∗6	∗6	∗6	∗6	∗6	L	∗6	L
AMS	MA-62 BOARD IC501 ㉛	O	L	L	L	L	L	L	L	∗7	∗7	L	L	L	L
$\overline{\text{SP}}$	MA-62 BOARD IC501 (91)	O	∗8	∗8	∗8	∗9	∗9	∗9	∗9	∗9	∗9	∗8	∗8	∗9	∗9
EP	MA-62 BOARD IC501 (92)	O	∗8	∗8	∗8	∗9	∗9	∗9	∗9	∗9	∗9	∗8	∗8	∗9	∗9
LP	MA-62 BOARD IC501 (93)	O				∗9	∗9	∗9	∗9	∗9	∗9			∗9	∗9
REC·$\overline{\text{P}}$	MA-62 BOARD IC501 ⑤	O	L	L	L	L	L	L	L	L	L	H	L	H	L
REC	MA-62 BOARD IC501 (51)	O	L	L	L	L	L	L	L	L	L	H	H	H	H
V SYNC	MA-62 BOARD IC501 (66)	I	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10
Y/C·$\overline{\text{PB}}$	MA-62 BOARD IC501 ㉓	O	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13
$\overline{\text{S}}$·VHS	MA-62 BOARD IC501 ㉝	O	∗14	∗14	∗14	∗14	∗14	∗14	∗14	∗14	∗14	∗14	∗14	∗14	∗14
X·DETECT	MA-62 BOARD IC501 ⑮	I	∗15	∗15	∗15	∗15	∗15	∗15	∗15	∗15	∗15	∗15	∗15	∗15	∗15

∗ 1. "H" when the tape stops, and "L" when it runs (for approx. 40msec).

∗ 2. Synchronized with drum rotaition. 30Hz 50% duty pulse.

∗ 3. Normally "L". "H" when CTL single is not played back.

∗ 4. V-cycle "H" pulse.

∗ 5. "H" when starts recording for approx. 7sec (SP), 21 sec (EP).

∗ 6. Normally "L". "H" during EDIT mode.

∗ 7. HI-Z (2.5V) during SP mode, or "L" during EP mode.

∗ 8. By SP/EP selector, "L" during SP mode, or "H" during EP mode.

∗ 9. By the mode on the recorded tape.

Signal \ Mode	SP	LP	EP
$\overline{\text{SP}}$ (91)	L	H	H
EP (92)	L	L	H
LP (93)	L	H	L

∗ 10. Composite sync. signal (positive polarity).

∗ 11. V-cycle "H" pulse during A INS·PAUSE mode.

∗ 12. "L" during A INS mode or A INS·PAUSE mode.

∗ 13. "L" during S input selected and playback mode.

∗ 14. "H" when S·CASSETTE ((86)pin) input signal is "L".
Refer to table when S·CASSETTE ((86)pin) input signal is "H".

V·$\overline{\text{PB}}$	L	H	
		S input off	S input on
$\overline{\text{S}}$·VHS	H	H	L

∗ 15. By the mode on the recorded tape.
S·VHS…"H".

2-7. SYSTE

Signal Na
REC CTL
CAP STO
$\overline{\text{STEP PL}}$
CAP V ∗
SW POSITIO
PB CTL
VD CTL
DRUM P
DRUM F
CAP FG
INDEX C
CAP RV
CAP DA ∗
DRUM DA
REC·$\overline{\text{P}}$
$\overline{\text{INSERT}}$

∗ 1. 30Hz pu

∗ 2. Pulse w

∗ 3. Input te
Used in

∗ 4. Input te

∗ 5. Indefinit

∗ 6. Cycle pu

∗ 7. 30Hz "H

2-7. SYSTEM CONTROL — SERVO PERIPHERAL CIRCUIT INTERFACE

Signal Name	Pin No.	I/O	STOP	FF	REW	TAPE LOADING	TAPE UNLOADING	PB	PB· PAUSE	SLOW	×2	CUE	REVIEW	REC	REC· PAUSE	INSERT	INSERT· PAUSE
REC CTL ∗1	MA-62 BOARD IC501 ⑦	O	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1
CAP STOP	MA-62 BOARD IC501 (71)	O	H	L	L	L	L	L	H	H	L	L	L	L	H	L	H
$\overline{\text{STEP PLS}}$	MA-62 BOARD IC501 ㉟	O	H	H	H	H	H	H	H	∗2	H	H	H	H	H	H	H
CAP V ∗3	MA-62 BOARD IC501 (59)	I															
SW POSITION ∗4	MA-62 BOARD IC501 (62)	I															
PB CTL	MA-62 BOARD IC501 (67)	I	H	∗6	∗6			∗1	H/L	∗2	∗6	∗6	∗6	∗1	H	∗1	H
VD CTL	MA-62 BOARD IC501 (77)	I	H	∗6	∗6			∗1	H/L	∗2	∗6	∗6	∗6	∗1	H	∗1	H
DRUM PG	MA-62 BOARD IC501 (68)	I	L	L	L	∗5	∗5	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7
DRUM FG	MA-62 BOARD IC501 (69)	I	L	L	L	∗5	∗5	∗8	∗8	∗8	∗8	∗8	∗8	∗8	∗8	∗8	∗8
CAP FG	MA-62 BOARD IC501 (70)	I	H/L	∗6	∗6	∗5	∗5	∗6	H/L	∗9	∗6	∗6	∗6	∗6	H/L	∗6	H/L
INDEX $\overline{\text{CS}}$	MA-62 BOARD IC501 (82)	O	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10	∗10
CAP RVS	MA-62 BOARD IC501 (72)	O	H	L	H	L	H	L	L	∗2	L	L	H	L	L	L	L
CAP DA ∗14	MA-62 BOARD IC501 (73)	O	∗11	L	L	∗11	∗11	∗12	∗11	∗11	∗12	∗12	∗12	∗12	∗11	∗12	∗11
DRUM DA ∗14	MA-62 BOARD IC501 (74)	O	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13	∗13
REC·$\overline{\text{P}}$	MA-62 BOARD IC501 ⑤	O	L	L	L	L	L	L	L	L	L	L	L	H	L	H	L
$\overline{\text{INSERT}}$	MA-62 BOARD IC501 ㊲	O	H	H	H	H	H	H	H	H	H	H	H	H	H	L	H

∗ 1. 30Hz pulse.
∗ 2. Pulse when the tape runs.
∗ 3. Input terminal for capstan constant-voltage drive.
Used in the FF/REW mode and for cassette loading/unloading.
∗ 4. Input terminal for switching position adjustment.
∗ 5. Indefinite cycle pulse.
∗ 6. Cycle pulse proportional to a tape speed.
∗ 7. 30Hz "H" pulse.
∗ 8. 360Hz pulse.
∗ 9. Tape run time pulse.
∗ 10. 8 msec cycle pulse.
∗ 11. "H" or "L" pulse in a cycle of approx. 2 msec.
∗ 12. "H" or "L" pulse in a cycle of approx. 1.5 msec.
∗ 13. "H" or "L" pulse in a cycle of approx. 3 msec.
∗ 14. 3-value output of "H", "L" and HI-Z (2.5V).

2-8. SYSTEM CONTROL — MECHANISM BLOCK INTERFACE

Signal Name	Pin No.	I/O	HI-SPEED REW	EJECTED	CASSETTE LOADING	CASSETTE UNLOADING	TAPE LOADING	TAPE UNLOADING	STOP	FF	REW	PB	PB• PAUSE	SLOW	×2	CUE	REVIEW	REC	REC PAUSE
CAM ∗ 1	MA-62 BOARD IC501 ⑪	O	L	L	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L
LOAD	MA-62 BOARD IC501 ⑬	O	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L
CW/CCW	MA-62 BOARD IC501 ⑫	O			H	L	H	L											
MODE 1	MA-62 BOARD IC501 (55)	I	H	L	L	L	H	H	L	H	H	H	L	L	H	H	H	H	L
MODE 2	MA-62 BOARD IC501 (54)	I	L	H	H	H	H	H	L	L	L	L	H	H	L	L	L	L	H
MODE 3	MA-62 BOARD IC501 (53)	I	H	H	H	H	L	L	L	L	L	H	H	H	H	H	L	H	H
MODE 4	MA-62 BOARD IC501 (52)	I	H	H	H	H	H	H	L	H	H	L	L	L	L	L	L	L	L
REC PRF	MA-62 BOARD IC501 ⑰	I	∗ 2	L	∗ 2	∗ 2	∗ 2	∗ 2	∗ 2	∗ 2	∗ 2	∗ 2	∗ 2	∗ 2	∗ 2	∗ 2	∗ 2	∗ 2	∗ 2
C-UP/DOWN	MA-62 BOARD IC501 ⑱	I	L	H	H → L	H → L	L	L	L	L	L	L	L	L	L	L	L	L	L
T REEL	MA-62 BOARD IC501 (64)	I	∗ 3	H/L	H/L	H/L	H/L	H/L	H/L	∗ 3	∗ 3	∗ 3	H/L	∗ 3	∗ 3	∗ 3	∗ 3	∗ 3	H/L
S REEL	MA-62 BOARD IC501 (63)	I	∗ 3	H/L	H/L	H/L	∗ 3	∗ 3	H/L	∗ 3	∗ 3	∗ 3	H/L	∗ 3	∗ 3	∗ 3	∗ 3	∗ 3	H/L
LAMP	MA-62 BOARD IC501 (85)	O	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4	∗ 4
DEW	MA-62 BOARD IC501 (65)	I	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5	∗ 5
CAP V	MA-62 BOARD IC501 (59)	I	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6	∗ 6
CAP STOP	MA-62 BOARD IC501 (71)	O	L	H	H	H	L	L	H	L	L	L	H	H	L	L	L	L	H
CAP RVS	MA-62 BOARD IC501 (72)	O	H	H			L	H	H/L	L	H	L	L	L/∗9	L	L	H	L	L
CAP DA ∗ 8	MA-62 BOARD IC501 (73)	O																	
T SENS	MA-62 BOARD IC501 ㉑	I	∗ 7	∗ 4	∗ 4	∗ 4	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7
S SENS	MA-62 BOARD IC501 ㉒	I	∗ 7	∗ 4	∗ 4	∗ 4	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7	∗ 7
X(S)-CASSETTE	MA-62 BOARD IC501 (86)	I	∗ 10	L	∗ 10	∗ 10	∗ 10	∗ 10	∗ 10	∗ 10	∗ 10	∗ 10	∗ 10	∗ 10	∗ 10	∗ 10	∗ 10	∗ 10	∗ 10

∗ 1. "H" when progressing to the MECHA mode.
∗ 2. "L" when a cassette erasure preventive finger is bent, and "H" when not bent.
∗ 3. Cycle pulse proportional to a reel speed.
∗ 4. "H" pulse in a cycle of approx. 2 msec.
∗ 5. Normally "H".
∗ 6. Input terminal for capstan constant-voltage drive.
Used in the FF/REW mode and for cassette loading/unloading.
∗ 7. Normally "L", "H" pulse in a cycle of 2 msec. when tape top or tape end is detected.
∗ 8. 3-value output of "H", "L" and HI-Z (2.5V).
∗ 9. Tape run pulse.
∗ 10. "H"when S•CASSETTE.

2-9. SYSTEM CONTROL — SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE

Signal Name	Pin No.	I/O	I/O LEVEL
$\overline{\text{COSMO·RESET}}$	MA-62 BOARD IC501 ㊵	I	Normally "H". Set to "L" when a power failure is detected or power is restored.
$\overline{\text{COSMO·CS}}$	MA-62 BOARD IC501 ㊹	I	Chip select signal from the timer microcomputer. V-cycle "L" pulse.
SI·BUS	MA-62 BOARD IC501 ㊺	I	Serial communication data from the timer microcomputer. V-cycle "L" pulse.
SO·BUS	MA-62 BOARD IC501 ㊻	O	Serial communication data to the timer microcomputer. V-cycle "L" pulse.
S CLK	MA-62 BOARD IC501 ㊼	I	Serial communication clock from the timer microcomputer. V-cycle "L" pulse.
S IN 2	MA-62 BOARD IC501 (79)	I	Serial communication data from the INDEX IC. V-cycle "L" pulse.
S OUT 2	MA-62 BOARD IC501 (80)	O	Serial communication data to the INDEX IC. V-cycle "L" pulse.
S CLK 2	MA-62 BOARD IC501 (81)	I/O	Serial communication clock to/from the INDEX IC. V-cycle "L" pulse.
INDEX $\overline{\text{CS}}$	MA-62 BOARD IC501 (82)	O	Chip select signal to the INDEX IC. V-cycle "L" pulse.

2-10. SYSTEM CONTROL — AUDIO BLOCK INTERFACE

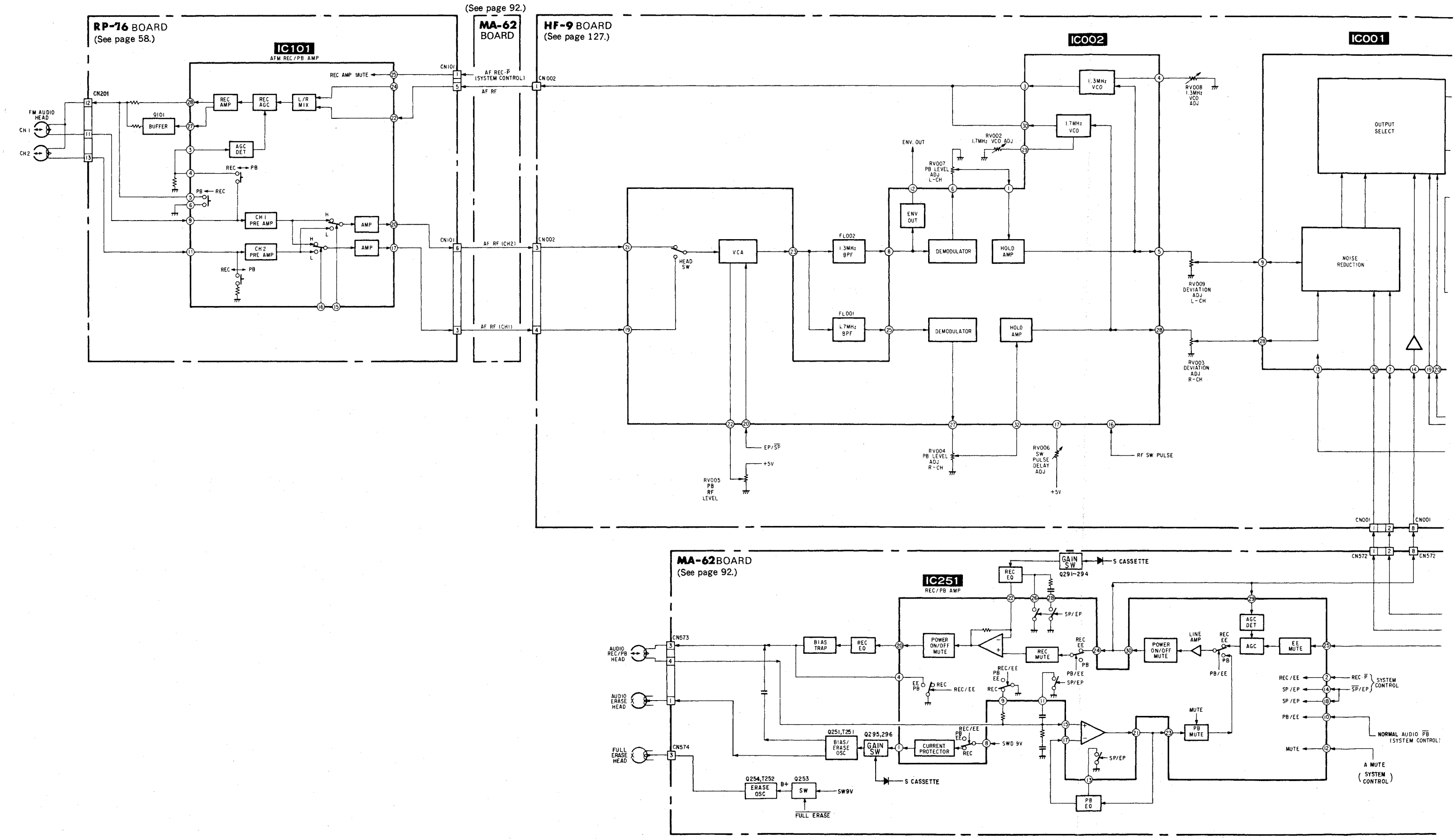
Signal Name	Pin No.	I/O	STOP/ FF/REW	TAPE LOADING	TAPE UNLOADING	PB	PB· PAUSE	SLOW	×2	CUE	REVIEW	REC	REC· PAUSE	INSERT	INSERT· PAUSE
$\overline{\text{AF PB}}$	MA-62 BOARD IC501 (96)	O	H	H	H	L	L	L	L	L	L	H	H	* 1	* 1
MONI (L)	MA-62 BOARD IC501 ⑩	O	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1
MONI (R)	MA-62 BOARD IC501 ⑨	O	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1
AF ENVELOP	MA-62 BOARD IC501(61)	I													
NA·PB	MA-62 BOARD IC501(95)	O	L	L	L	H	H	H	H	H	H	L	L	* 1	* 1
$\overline{\text{A}}$ MUTE	MA-62 BOARD IC501 ㊳	O	L	L	L	* 1	H	H	H	H	H	L	L	L	L
EP	MA-62 BOARD IC501 (92)	O	* 2	* 2	* 2	* 3	* 3	* 3	* 3	* 3	* 3	* 2	* 2	* 3	* 3
REC·$\overline{\text{P}}$	MA-62 BOARD IC501 ⑤	O	L	L	L	L	L	L	L	L	L	H	L	H	L

* 1. By Audio monitor

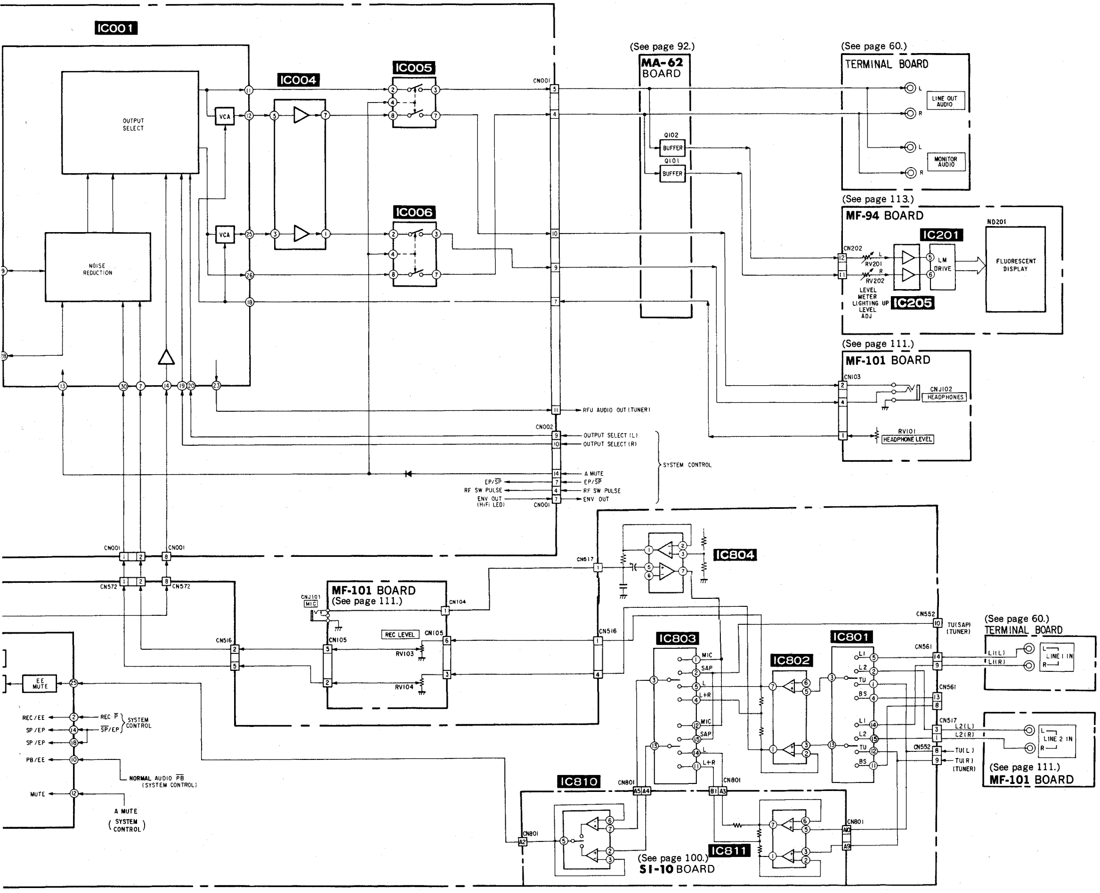
* 2. By SP/EP selector, "L" during SP mode, or "H" during EP mode.

* 3. By the mode on the recorded tape, "L" when it is SP mode, or "H" when "EP" mode.

-11. AUDIO BLOCK DIAGRAM

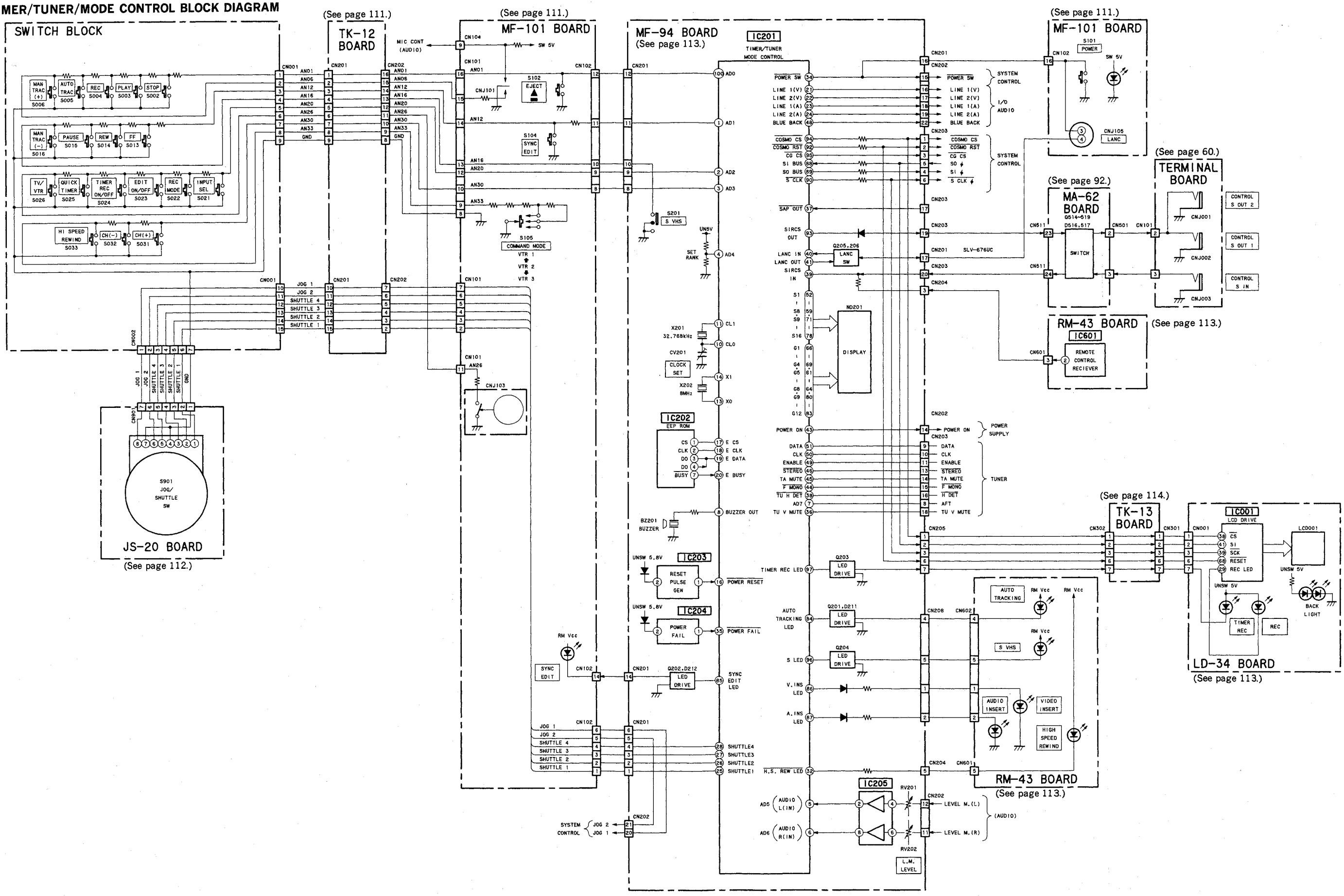


RP-76 BOARD
(See page 58.)
IC101
AFM REC/PB AMP
(See page 92.)
MA-62 BOARD
HF-9 BOARD
(See page 127.)
IC002
IC001
CN201
FM AUDIO HEAD
CH1
CH2
Q101
BUFFER
REC AMP
REC AGC
L/R MIX
AGC DET
REC ↔ PB
PB ← REC
CH1 PRE AMP
CH2 PRE AMP
AMP
H
L
REC AMP MUTE
CN101
AF REC-P̄ (SYSTEM CONTROL)
AF RF
AF RF (CH2)
AF RF (CH1)
CN002
HEAD SW
VCA
FL002
1.3MHz BPF
FL001
1.7MHz BPF
DEMODULATOR
HOLD AMP
ENV OUT
ENV. OUT
1.3MHz VCO
1.7MHz VCO
RV002 1.7MHz VCO ADJ
RV007 PB LEVEL ADJ L-CH
RV008 1.3MHz VCO ADJ
RV009 DEVIATION ADJ L-CH
RV003 DEVIATION ADJ R-CH
RV004 PB LEVEL ADJ R-CH
RV006 SW PULSE DELAY ADJ
RV005 PB RF LEVEL
EP/SP̄
+5V
RF SW PULSE
OUTPUT SELECT
NOISE REDUCTION
CN001
CN572
MA-62 BOARD
(See page 92.)
IC251
REC/PB AMP
GAIN SW
S CASSETTE
Q291~294
REC EQ
SP/EP
CN573
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
CN574
BIAS TRAP
POWER ON/OFF MUTE
REC MUTE
REC/EE
LINE AMP
AGC DET
AGC
EE MUTE
PB/EE
EE PB
REC
Q251,T251
BIAS/ERASE OSC
Q295,296
CURRENT PROTECTOR
SWD 9V
MUTE
PB MUTE
PB EQ
Q254,T252
ERASE OSC
B+
Q253
SW
SW9V
FULL ERASE
REC/EE ← REC-P̄
SP/EP ← SP̄/EP
SP/EP
PB/EE
SYSTEM CONTROL
NORMAL AUDIO P̄B (SYSTEM CONTROL)
MUTE
A MUTE (SYSTEM CONTROL)

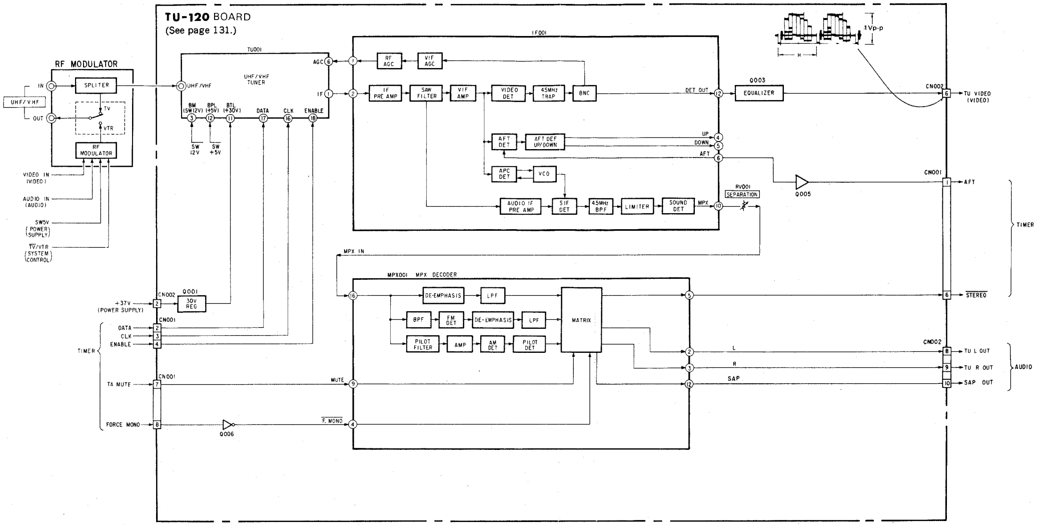

IC001
OUTPUT SELECT
VCA
NOISE REDUCTION
IC004
IC005
IC006
CN001
(See page 92.)
MA-62 BOARD
Q102
BUFFER
Q101
(See page 60.)
TERMINAL BOARD
LINE OUT AUDIO
MONITOR AUDIO
(See page 113.)
MF-94 BOARD
ND201
IC201
CN202
RV201
RV202
LM DRIVE
FLUORESCENT DISPLAY
LEVEL METER LIGHTING UP LEVEL ADJ
IC205
(See page 111.)
MF-101 BOARD
CN103
CNJ102
HEADPHONES
RV101
HEADPHONE LEVEL
RFU AUDIO OUT (TUNER)
CN002
OUTPUT SELECT (L)
OUTPUT SELECT (R)
SYSTEM CONTROL
A MUTE
EP/$\overline{SP}$
RF SW PULSE
ENV OUT
ENV OUT (HiFi LED)
CN517
IC804
CN572
MF-101 BOARD
(See page 111.)
CNJ101
MIC
CN104
REC LEVEL
CN105
RV103
RV104
CN516
IC803
MIC
SAP
L
L+R
IC802
IC801
L1
L2
TU
BS
CN552
TU(SAP) (TUNER)
CN561
(See page 60.)
TERMINAL BOARD
L1(L)
L1(R)
LINE 1 IN
L2(L)
L2(R)
LINE 2 IN
TU(L)
TU(R)
(TUNER)
(See page 111.)
MF-101 BOARD
EE MUTE
REC/EE
SP/EP
PB/EE
MUTE
REC $\overline{P}$
$\overline{SP}$/EP
SYSTEM CONTROL
NORMAL AUDIO $\overline{PB}$ (SYSTEM CONTROL)
A MUTE (SYSTEM CONTROL)
IC810
CN801
IC811
(See page 100.)
SI-10 BOARD

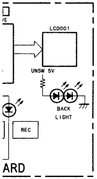
2-12. TIMER/TUNER/MODE CONTROL BLOCK DIAGRAM

2-13.


SWITCH BLOCK
MAN TRAC (+) S006
AUTO TRAC S005
REC S004
PLAY S003
STOP S002
MAN TRAC (-) S016
PAUSE S015
REW S014
FF S013
TV/VTR S026
QUICK TIMER S025
TIMER REC ON/OFF S024
EDIT ON/OFF S023
REC MODE S022
INPUT SEL S021
HI SPEED REWIND S033
CH(-) S032
CH(+) S031
CN001
AN01
AN06
AN12
AN16
AN20
AN26
AN30
AN33
GND
JOG 1
JOG 2
SHUTTLE 4
SHUTTLE 3
SHUTTLE 2
SHUTTLE 1
CN002
CN901
S901 JOG/SHUTTLE SW
JS-20 BOARD
(See page 112.)
(See page 111.)
TK-12 BOARD
CN201
CN202
MIC CONT (AUDIO)
(See page 111.)
MF-101 BOARD
CN104
SW 5V
CN101
CNJ101
S102 EJECT
AN12
S104 SYNC EDIT
AN16
AN20
AN30
AN33
S105 COMMAND MODE
VTR 1
VTR 2
VTR 3
CN102
AN26
CNJ103
RM Vcc
SYNC EDIT
MF-94 BOARD
(See page 113.)
IC201 TIMER/TUNER MODE CONTROL
S201 S VHS
UNSW
SET RANK
X201 32.768kHz
CV201 CLOCK SET
X202 8MHz
IC202 EEP ROM
CS
CLK
DO
DO
BUSY
E CS
E CLK
E DATA
E BUSY
BZ201 BUZZER
BUZZER OUT
UNSW 5.8V
IC203 RESET PULSE GEN
POWER RESET
IC204 POWER FAIL
POWER FAIL
Q202,D212 LED DRIVE
SYNC EDIT LED
SHUTTLE4
SHUTTLE3
SHUTTLE2
SHUTTLE1
SYSTEM CONTROL
JOG 2
JOG 1
AD0
AD1
AD2
AD3
AD4
CL1
CL0
X1
X0
POWER SW
LINE 1(V)
LINE 2(V)
LINE 1(A)
LINE 2(A)
BLUE BACK
COSMO CS
COSMO RST
CG CS
SI BUS
SO BUS
S CLK
SAP OUT
SIRCS OUT
LANC IN
LANC OUT
SIRCS IN
Q205,206 LANC SW
S1
S8
S9
S16
G1
G4
G5
G8
G9
G12
ND201 DISPLAY
POWER ON
DATA
CLK
ENABLE
STEREO
TA MUTE
F MONO
TU H DET
AD7
TU V MUTE
TIMER REC LED
Q203 LED DRIVE
AUTO TRACKING LED
Q201,D211 LED DRIVE
S LED
Q204 LED DRIVE
V.INS LED
A.INS LED
H.S. REW LED
IC205
RV201
RV202
L.M. LEVEL
AD5 AUDIO L(IN)
AD6 AUDIO R(IN)
CN201
CN202
CN203
CN204
CN205
CN208
SYSTEM CONTROL
I/O AUDIO
AFT
H DET
TUNER
POWER SUPPLY
LEVEL M.(L)
LEVEL M.(R)
(AUDIO)
SLV-676UC
(See page 111.)
MF-101 BOARD
S101 POWER
SW 5V
CNJ105 LANC
(See page 60.)
TERMINAL BOARD
CONTROL S OUT 2
CONTROL S OUT 1
CONTROL S IN
CNJ001
CNJ002
CNJ003
(See page 92.)
MA-62 BOARD
Q514-519 D516,517
SWITCH
CN511
CN501
RM-43 BOARD
(See page 113.)
IC601 REMOTE CONTROL RECIEVER
CN601
(See page 114.)
TK-13 BOARD
CN302
CN301
IC001 LCD DRIVE
CS
SI
SCK
RESET
REC LED
LCD001
UNSW 5V
BACK LIGHT
TIMER REC
REC
LD-34 BOARD
(See page 113.)
CN602
AUTO TRACKING
RM Vcc
S VHS
AUDIO INSERT
VIDEO INSERT
HIGH SPEED REWIND
RM-43 BOARD
(See page 113.)

2-13. TUNER BLOCK DIAGRAM


TU-120 BOARD
(See page 131.)
RF MODULATOR
IN
OUT
UHF/VHF
SPLITER
TV
VTR
RF MODULATOR
VIDEO IN (VIDEO)
AUDIO IN (AUDIO)
SW5V (POWER SUPPLY)
TV/VTR (SYSTEM CONTROL)
TU001
UHF/VHF TUNER
UHF/VHF
AGC
IF
BM (SW12V)
BPL (+5V)
BTL (+30V)
DATA
CLK
ENABLE
SW 12V
SW +5V
IF001
RF AGC
VIF AGC
IF PRE AMP
SAW FILTER
VIF AMP
VIDEO DET
45MHz TRAP
BNC
DET OUT
AFT DET
AFT DEF UP/DOWN
UP
DOWN
AFT
APC DET
VCO
AUDIO IF PRE AMP
SIF DET
45MHz BPF
LIMITER
SOUND DET
MPX
RV001
SEPARATION
Q003
EQUALIZER
1Vp-p
H
CN002
TU VIDEO (VIDEO)
Q005
CN001
AFT
TIMER
MPX IN
MPX001 MPX DECODER
DE-EMPHASIS
LPF
BPF
FM DET
DE-EMPHASIS
LPF
PILOT FILTER
AMP
AM DET
PILOT DET
MATRIX
STEREO
CN002
L
R
SAP
TU L OUT
TU R OUT
SAP OUT
AUDIO
CN002
Q001
30V REG
+37V (POWER SUPPLY)
CN001
DATA
CLK
ENABLE
TIMER
CN001
TA MUTE
MUTE
FORCE MONO
F. MONO
Q006


LCD001
UNSW 5V
BACK LIGHT
REC

ARD
3.)

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SLV-R5UC
RMT-V5A

SONY®
SERVICE MANUAL

US Model
Canadian Model

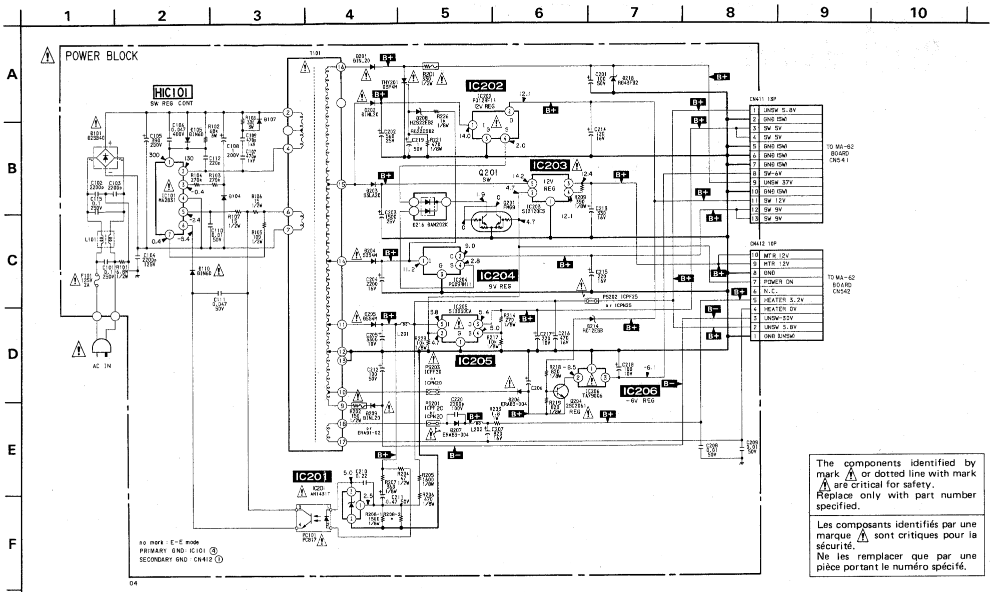
SUPPLEMENT-2

POWER BLOCK

File this supplement-2 with the service manual and supplement-1.

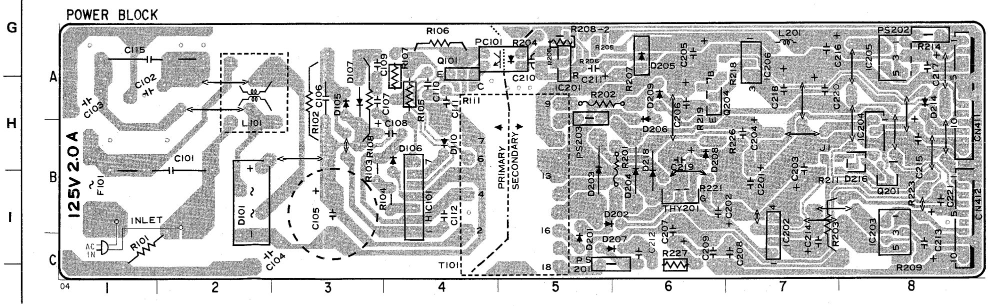
SECTION 1
PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

POWER


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
POWER BLOCK
HIC101
SW REG CONT
T101
IC202
IC202 PQ12RF11 12V REG
IC203
IC203 SI3120CS
12V REG
Q201 SW
Q201 FM59
IC204
IC204 PQ09RH11
9V REG
IC205
IC205 SI3050CA
IC206
IC206 TA79006
-6V REG
IC201
IC201 AN1431T
PC101 PC817
D101 D2SB40
F101 125V 2A
L101
AC IN
B+
B−
CN411 13P
1 UNSW 5.8V
2 GND (SW)
3 SW 5V
4 SW 5V
5 GND (SW)
6 GND (SW)
7 GND (SW)
8 SW-6V
9 UNSW 37V
10 GND (SW)
11 SW 12V
12 SW 9V
13 SW 9V
TO MA-62 BOARD CN541
CN412 10P
10 MTR 12V
9 MTR 12V
8 GND
7 POWER ON
6 N.C.
5 HEATER 3.2V
4 HEATER 0V
3 UNSW-30V
2 UNSW 5.8V
1 GND (UNSW)
TO MA-62 BOARD CN542
no mark : E-E mode
PRIMARY GND : IC101 ④
SECONDARY GND : CN412 ①
04

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.


POWER BLOCK
G
H
I
A
B
C
125V 2.0A
F101
INLET
AC IN
C115
C102
C103
C101
R101
C104
L101
D101
C105
HIC101
T101
PRIMARY
SECONDARY
PC101
Q101
IC201
IC202
IC203
IC204
IC205
IC206
Q201
Q204
THY201
PS202
PS203
CN411
CN412
04
1
2
3
4
5
6
7
8

SECTION 2
ELECTRICAL PARTS LIST

POWER

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- CAPACITORS
  uF: μF
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD....

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
	⚠1-413-566-11	POWER BLOCK **********	
		Not supplied parts other than as follows.	
	⚠1-551-478-00	CORD, POWER	
		DIODE	
D101	⚠8-719-500-37	DIODE D2SB40	
D105	9-998-285-01	DIODE D1N60	
D110	⚠9-998-285-01	DIODE D1N60	
D201	⚠8-719-510-26	DIODE D1NL20	
D202	⚠8-719-510-26	DIODE D1NL20	
D204	⚠8-719-500-15	DIODE S3S4M	
D205	⚠8-719-500-70	DIODE D5S4M	
D206	⚠9-998-861-01	DIODE ERA83-004	
D207	⚠9-998-861-01	DIODE ERA83-004	
D208	8-719-110-49	DIODE RD18ESB2	
D209	⚠8-719-510-26	DIODE D1NL20	
D214	8-719-110-31	DIODE RD12ESB2	
D216	8-719-400-18	DIODE MA152WK	
D218	9-998-289-01	DIODE RD43FB2	
		FUSE	
F101	⚠1-532-743-11	FUSE, GLASS TUBE 2.0A 125V	

Ref.No	Part No.	Description	Remark
		IC	
HIC101	⚠9-900-265-01	HIC MA2831	
IC201	⚠8-759-420-19	IC AN1431T	
IC202	⚠9-998-291-01	IC PQ12RF11	
IC203	⚠1-808-796-11	IC SI3120CS	
IC205	⚠8-749-920-43	IC SI3050CA	
IC206	⚠8-759-604-94	IC M5F79M06L	
		PHOTO COUPLER	
PC101	⚠8-719-902-56	PC817	
		IC LINK	
PS201	⚠1-532-685-00	LINK, IC ICP-N20 0.8A	
PS202	⚠1-532-637-00	LINK, IC ICP-N25 1.0A	
PS203	⚠1-532-685-00	LINK, IC ICP-N20 0.8A	
		TRANSISTOR	
Q201	8-729-920-28	TRANSISTOR FMG9	
Q204	⚠8-729-140-90	TRANSISTOR 2SD773-34	
		RESISTOR	
R201	⚠1-212-988-00	RES, FUSE 180	1/2W
R202	⚠1-212-986-00	RES, FUSE 150	1/2W
		THYRISTOR	
THY201	⚠8-719-123-76	THYRISTOR 03P4J	

9-972-965-82

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Home Video Group

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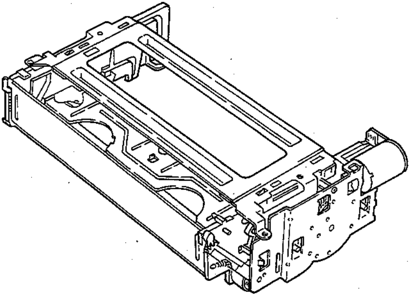
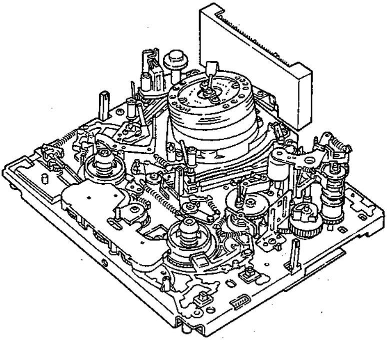
VIDE-V12926

VHS MECHANICAL ADJUSTMENT MANUAL II

- Please use in conjunction with the SERVICE MANUAL.
- This VHS MECHANICAL ADJUSTMENT MANUAL II can be used for NTSC system and PAL system.





VHS VIDEO RECORDER

SONY®

MICROFILM

TABLE OF CONTENTS

Section *Title* *Page*

1. PREPARATIONS FOR CHECKS, ADJUSTMENTS AND REPLACEMENT OF THE DECK MECHANISM

1-1. Loading and unloading video cassettes with the power off 3
  1-1-1. Manual loading and unloading 3
  1-1-2. Loading and unloading using a separate power source 3
1-2. Threading and unthreading with the power off 3
  1-2-1. Manual threading and unthreading 3
  1-2-2. Threading and unthreading using a separate power source 3
1-3. To complete threading with the FL cassette controller removed 4

2. PERIODICAL INSPECTION AND REPLACEMENT

2-1. Cleaning the rotary head disc ass'y 5
2-2. Cleaning the tape transport system 5
2-3. Cleaning the drive system 5
2-4. Periodic Maintenance 6
2-5. Service Tools and Jigs 7

3. REPLACEMENT OF MAJOR COMPONENT PARTS OF THE DECK MECHANISM

3-1. FL mechanism 8
  3-1-1. FL door 8
  3-1-2. Erasure protection lever 8
  3-1-3. Gear cover ass'y 8
  3-1-4. Loading motor, worm gear (FL), worm wheel (FL), worm bearing 8
  3-1-5. Door OPEN/CLOSE arm 9
3-2. TS ass'y and guide roller ass'y No.2 9
3-3. ACE ass'y 10
3-4. Drum ass'y 10
3-5. Drum base ass'y 10
3-6. Pinch roller ass'y and elevator cam 11
3-7. Cam gear, press and transmission gear 11
3-8. RVS arm ass'y and RVS cam gear 12
3-9. Guide No.7 12
3-10. S-brake ass'y, T-brake ass'y 13
3-11. T-soft brake ass'y, REV brake arm 13
3-12. S-soft brake arm ass'y 13
3-13. S-guide and T-guide roller assy's 14
3-14. Reel lock release and REW gear 14
3-15. Tension regulator arm ass'y, tension regulator band ass'y 15
3-16. S take-up ass'y 15
3-17. S-reel ass'y 16
3-18. T-reel ass'y 16
3-19. Pendulum arm ass'y 16
3-20. Relay gear 17
3-21. Adjuster arm ass'y 17
3-22. CAP brake ass'y 17
3-23. Capstan motor 18
3-24. Rotary switch 18
3-25. RKB cam gear 19
3-26. Sub-chassis ass'y 19
3-27. Pendulum slide plate, pendulum arm 20
3-28. The limiter arm and limiter slide plate 20
3-29. Cam motor 20
3-30. Cam gear 20
3-31. Tension regulator arm, S take-up arm 21
3-32. Mode slide plate, RVS relay gear 21
3-33. Brake arm, brake slide plate 21
3-34. Right shuttle, right loading gear ass'y 22
3-35. Left shuttle ass'y, left loading gear ass'y 22
3-36. C-roller arm ass'y, C-roller release lever 23

4. ADJUSTMENT

4-1. Tape path adjustment

  4-1-1. Tension regulator position/tension adjustement 24
  4-1-2. Height adjustment of the guide roller No.2 25
  4-1-3. Height adjustment of guide roller No. 7 and the RVS arm 25
  4-1-4. Height adjustment of guide rollers No.3 and No.6 26
  4-1-5. ACE head ass'y adjustment (rough adjustment) 26
  4-1-6. ACE head assembly adjustment (precision adjustment) 27
  4-1-7. X-value adjustment 27
  4-1-8. Adjustments after replacing the drum (video head) 29
  4-1-9. Checking the tension and torque 31

1. PREPARATIONS FOR CHECKS, ADJUSTMENTS AND REPLACEMENT OF THE DECK MECHANISM

Note : Refer to "Replacement Method" in the Service Guide for instructions on replacing the cabinet and PC boards. DO not perform cassette loading or threading with the VCR positioned upside-down.

1-1. LOADING AND UNLOADING VIDEO CASSETTES WITH THE POWER OFF. (Fig. 1-1.)

1-1-1. Manual loading and unloading

1) Rotate the loading motor in the direction of arrow Ⓐ until loading is compleated.
(When unloading, rotate the loading motor in the direction of arrowⒷ.)

1-1-2. Loading and unloading using a separate power source.

1) Cassette loading is performed by applying approx. 10V (300 mA) to the power terminal of the loading motor using a stabilized DC power source.
(When unloading, apply the same voltage to the opposite polarity of the power terminal.)

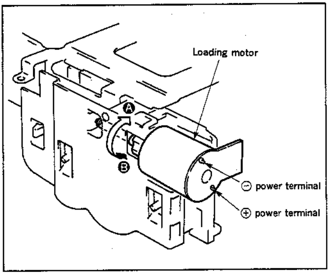


Fig. 1-1.

1-2. THREADING AND UNTHREADING WITH THE POWER OFF. (Fig. 1-2)

1-2-1. Manual threading and unthreading

1) Rotate the cam motor ❶ in the direction of arrow Ⓐ until threading is completed.
(When unthreading, rotate the cam motor ❶ in the direction of arrowⒷ.)

1-2-2. Threading and unthreading using a separate power source.

1) Threading is performed by applying approx. 10V (500 mA) to the power terminal for the cam motor ❶ using a DC stabilized power source.
(When unthreading, apply the same voltage to the opposite polarity of the power terminal.)

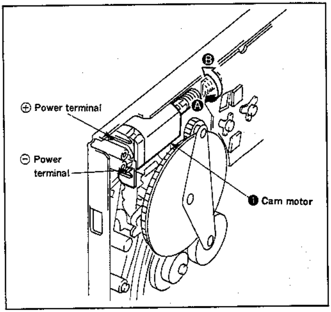


Fig. 1-2.

1-3. TO COMPLETE THREADING WITH THE FL CASSETTE CONTROLLER REMOVED. (Fig. 1-3)

1) Unplug the AC power cord from the power outlet.
2) Shield the supply, take-up sensors and the LED with black-masking tape.
3) Hold the cassatte down switch depressed by taping it, etc.
4) Plug the AC power cord into a power outlet.
   (At this time, the power should turn on and the tape rewinds for approx. 10 seconds, and the power turns off.)
5) Turn the power switch ON so that the mechanism is ready for loading.

Note : In this condition, the VTR is ready to operate in the different operating modes, including the record mode. At this time, rewind the tape for at least 15 seconds, then perform fast forward (FF).

Note : Following the above, be sure to reset the mechanism to the previous state as outlined below.

1) Remove the black-masking tape shielding the supply and take-up sensors, the LED and the tape holding cassette down switch.
2) Unplug the AC power cord from the power outlet to reset the system control microprocessor.

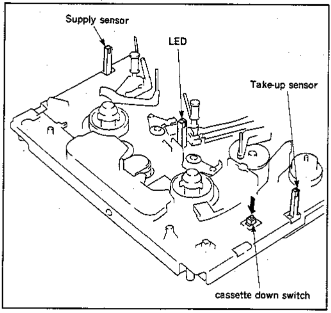


Fig. 1-3.

2. PERIODICAL INSPECTION AND REPLACEMENT

We recommend performing the following periodical inspections and maintenance in order to ensure that the unit operates in top condition and offers full performance, as well as realizes a long life of the mechanism and tapes.

* Be sure to perform the following maintenance procedures after the unit is repaired (regardless how long the unit has been used.)

2-1. CLEANING THE ROTARY HEAD DISC ASS'Y

1) Press Attach a deer skin cloth (Jig. Ref. No. J-7) soaked in cleaning solution (Jig. Ref. No. J-5) lightly to the rotary drum ass'y, then turn the rotary head disc slowly by hand to clean the surface of the rotary drum ass'y. (At this time, do not turn on the power motor to rotate the rotary head disc for cleaning.)
2) Also, do not wipe the drum ass'y by moving the deer skin cloth vertically across the head as this could damage of the tip of the head.

2-2. CLEANING THE TAPE TRANSPORT SYSTEM

1) Clean the tape transport surfaces (tape guide, a drum ass'y surfaces, capstan, pinch roller, etc.) with a deer skin cloth soaked in an approved in the recommended cleaning solution.

2-3. CLEANING THE DRIVE SYSTEM

1) Wipe the drive mechanism with an ordinary cloth soaked in an approved cleaning solution.

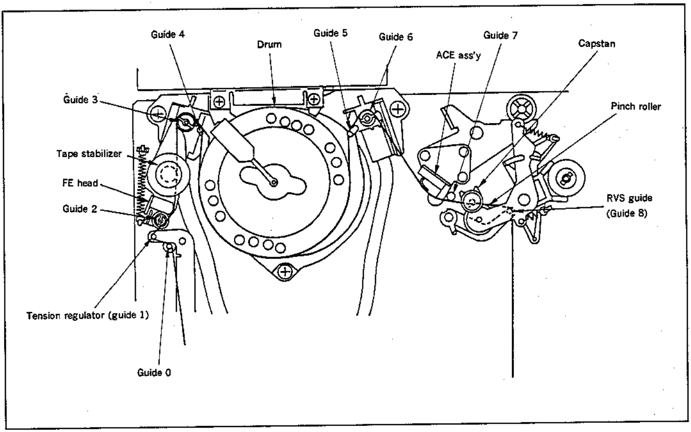

Guide 4
Drum
Guide 5
Guide 6
Guide 7
ACE ass'y
Capstan
Guide 3
Pinch roller
Tape stabilizer
FE head
Guide 2
RVS guide
(Guide 8)
Tension regulator (guide 1)
Guide 0

Fig. 2-1.

2-4. PERIODIC MAINTENANCE

Location of Maintenance and Check		User Hours Replacement Part No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Perfor mance Check	Clean tape running surfaces	——	○	○	○	○	○	○	○	○	○	○	Always perform after repair.
	Clean, degauss ACE ass'y	——	○	○	○	○	○	○	○	○	○	○	
	Clean, degauss video disc ass'y	——	○	○	○	○	○	○	○	○	○	○	Head life is greatly affected by environment and method of use.
Driving System	Reel belt	3-736-013-01	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Always perform after repair.
Tape Running System	Abnormal noise	——	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust or replace source of abnormal noise.
	Back tension measurement	——	–	☆	–	☆	–	☆	–	☆	–	☆	Check according to 4-1-1. Spec : 24 — 34g/cm (Measured with torque cassette)
	Brake system check	——	–	☆	–	☆	–	☆	–	☆	–	☆	
	REC/PB function check	——	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Always perform after repair.
	Forward torque measurement		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Spec : 80 — 140 g•cm

○ Cleaning ☆ Check

Note : Refer to the above items for part replacement when performing an overhaul.

2-5. SERVICE TOOLS AND JIGS

Ref. No.	Description	Part No.	Printing on jig	Remarks
J-1	Master plane	H-7099-279-H		
J-2	Reel disc height jig	H-7099-038-H		
J-3	Torque gauge adapter	H-7099-035-H		
J-4	Torque gauge	H-7099-039-H		
J-5	0.93mm Allen wrench	H-7099-202-H		
J-6	NTSC torque cassette VHT-063S PAL torque cassette	J-6082-011-A J-6082-066-A		For rewind torque and back tension
	NTSC torque cassette VHT-404S PAL torque cassette	J-6082-012-A J-6082-067-A		For cue/review
J-7	NTSC alignment tape JVC-MH-1 PAL alignment tape JVC-MH-2	H-7099-046-H H-7099-052-H		
	NTSC Hi-Fi alignment tape PAL Hi-Fi alignment tape	H-7099-153-H H-7099-175-H		
J-8	Cleaning fluid	Y-2031-001-0	—	
J-9	Chamois cloth	2-034-697-00	—	Cleaning
J-10	Head degausser	Widely available	—	Video, audio head degaussing
J-11	Small adjustment mirror (with handle) Small adjustment mirror (mirror only)	J-6080-029-A J-6080-030-1	SL-5052	For tape path and tape running adjustment and check

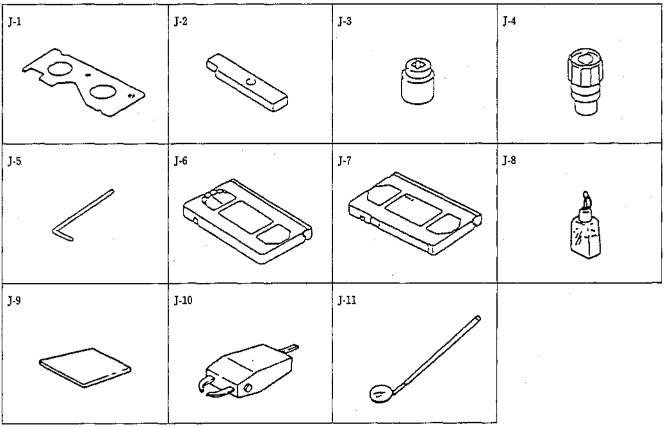


Fig. 2-2. Service tools and jigs

3. REPLACEMENT OF MAJOR COMPONENT PARTS OF THE DECK MECHANISM

Note:
- ○ Refer to "Replacement Method" in the Service Guide for replacing the cabinet and PC boards.
- ○ When mounting parts, reverse the replacement procedure while referring to "Precautions on Mounting Parts".
- ○ After grease coated parts such as gears are replaced, re-grease the replaced part.
- ○ Do not touch the guides (taped surface) and brake shoe directly with your fingers or grease them, etc.
- ○ Gears must be mounted so that they mesh with each other.

3-1. FL MECHANISM

3-1-1. FL door (Fig. 3-1.)

1) Press the claw ❶ in the direction of arrow Ⓐ, then remove the FL door ❷ in the direction of arrow Ⓑ.

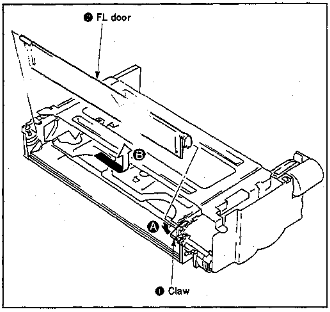

❷ FL door
Ⓑ
Ⓐ
❶ Claw

Fig. 3-1.

3-1-2. Erasure protection lever (Fig. 3-2)

1) Remove the spring ❶.
2) Disengage the claw ❷, then slide the erasure protection lever ❸ in the direction of arrow Ⓐ.
3) Disengage the erasure protection lever ❸ in the direction of arrow Ⓑ.

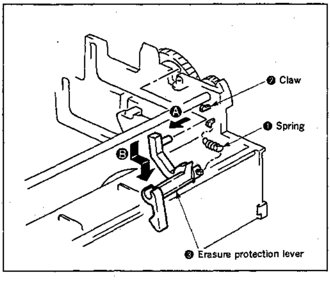

❷ Claw
Ⓐ
❶ Spring
Ⓑ
❸ Erasure protection lever

Fig. 3-2.

3-1-3. Gear cover ass'y (Fig. 3-3)

1) Disengage the four claws ❶, then remove the gear cover ass'y ❷.

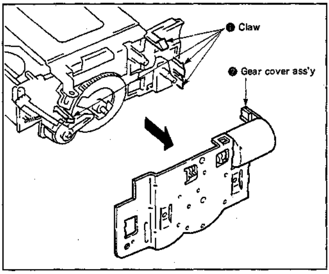

❶ Claw
❷ Gear cover ass'y

Fig. 3-3.

3-1-4. Loading motor, worm gear (FL), worm wheel (FL), worm bearing (Fig. 3-4)

1) Remove washer 3 ❶, then pull out the worm wheel (FL) ❷.
2) Remove the two screws ❸, then remove the loading motor ❹.
3) Remove the worm gear (FL) ❺ and worm bearing ❻.

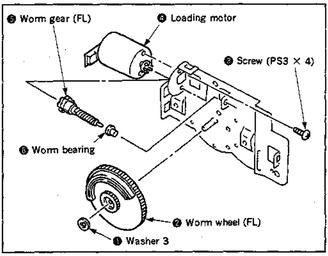

❺ Worm gear (FL)
❹ Loading motor
❸ Screw (PS3 × 4)
❻ Worm bearing
❷ Worm wheel (FL)
❶ Washer 3

Fig. 3-4.

3-1-5. Door OPEN/CLOSE arm (Fig. 3-5)

1) Remove the spring ❶.
2) Pull out the door OPEN/CLOSE arm ❷.

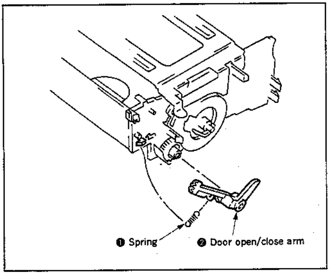

❶ Spring
❷ Door open/close arm

Fig. 3-5.

[Precautions on remounting] (Figs. 3-6 and 3-7.)

- ○ When mounting the gear cover ass'y, match up the two holes on the gear cover ass'y with the two holes on the worm wheel (FL) and then with the hole on the right drive arm ass'y.
- ○ Mesh the FL door and the door OPEN/CLOSE arm together as shown in Ⓐ section in the figure below.
- ○ The erasure protection lever shaft must fit into the groove on the left drive arm ass'y.

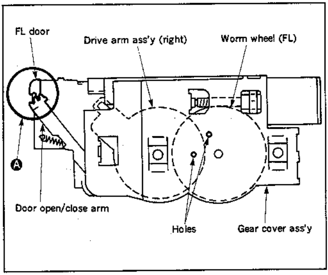

FL door
Drive arm ass'y (right)
Worm wheel (FL)
Ⓐ
Door open/close arm
Holes
Gear cover ass'y

Fig. 3-6.

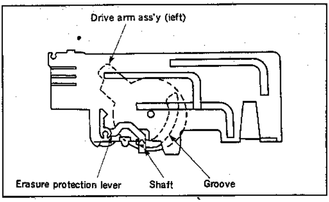

Drive arm ass'y (left)
Erasure protection lever
Shaft
Groove

Fig. 3-7.

3-2. TS ASS'Y AND GUIDE ROLLER ASS'Y No. 2 (Fig. 3-8)

1) Remove the spring ❶.
2) Remove the TS ass'y ❷ in the direction of arrow Ⓐ.
3) Turn guide roller ass'y No. 2 ❸ in the direction of arrow Ⓑ and pull it out.

[Precautions on remounting]

- ○ Clean the surface of guide roller No. 2 ❸ where the tape is attached.
- ○ Apply lubricant over the section shown in Figure A below.

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

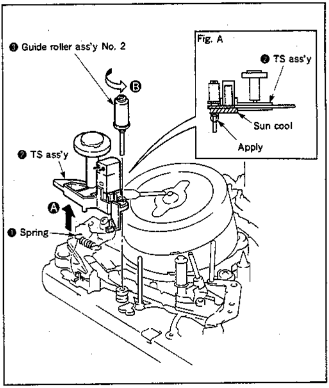

❸ Guide roller ass'y No. 2
Ⓑ
❷ TS ass'y
Ⓐ
❶ Spring
Fig. A
❷ TS ass'y
Sun cool
Apply

Fig. 3-8.

3-3. ACE ASS'Y (Fig. 3-9)

1) Slide the torsion coil spring ❶ in the direction of the arrow.
2) Remove the nylon nut N3 ❷, then pull out the ACE ass'y ❸.
3) Remove the ACE adjuster screw ❹.

[Precautions on remounting]

- ○ Clean the surface of the ACE ass'y ❸ where the tape is attached.
- ○ Hook both ends of the torsion coil spring ❶ to the ass'y as shown in Figure A below.
- ○ Adjust the ACE adjuster screw ❹ to the height shown in Figure A.

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

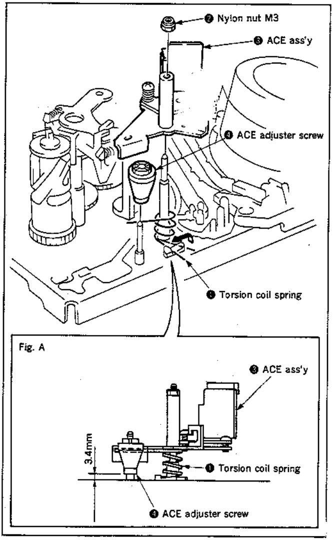

❷ Nylon nut M3
❸ ACE ass'y
❹ ACE adjuster screw
❶ Torsion coil spring
Fig. A
❸ ACE ass'y
3.4mm
❶ Torsion coil spring
❹ ACE adjuster screw

Fig. 3-9.

3-4. DRUM ASS'Y (Fig. 3-10)

1) Remove the three screws ❶, then remove the drum ass'y ❷.

[Precautions on remounting]

- ○ Do not touch the head tips ❸ and the ground plate ❹ directly with your fingers or tools.
- ○ Clean the surface of the drum ass'y ❷ where a tape is attached.
- ○ The stopper ❺ must be attached at the point shown in the figure below.
- ○ Screws must be fastened with a 6kg•cm (±1kg•cm) screw fastening torque. (The screws can be mounted in any order.)

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

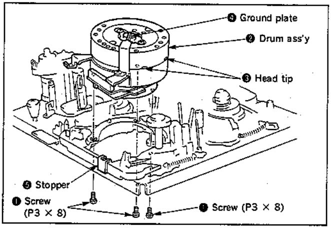

❹ Ground plate
❷ Drum ass'y
❸ Head tip
❺ Stopper
❶ Screw (P3 × 8)
❶ Screw (P3 × 8)

Fig. 3-10.

3-5. DRUM BASE ASS'Y (Fig. 3-11)

1) Remove the drum. (Refer to 3-4.)
2) Remove the three screws ❶, then remove the drum base ass'y ❷.

[Precautions on remounting]

- ○ The spacer ❸ for the drum base must be mounted in its previous position as shown in the figure below. [Note that some units do not feature the spacer ❸.]
- ○ Fastening torque must be 10kg•cm (±1kg•cm)
- ○ The screws must be mounted in order of (a),(b) and (c).

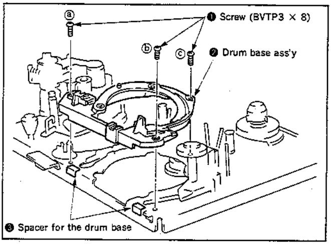

ⓐ
ⓑ
ⓒ
❶ Screw (BVTP3 × 8)
❷ Drum base ass'y
❸ Spacer for the drum base

Fig. 3-11.

3-6. PINCH ROLLER ASS'Y AND ELEVATOR CAM (Fig. 3-12)

1) Remove the two claws ❶, then pull out the stopper ❷.
2) Pull out the pinch roller ass'y ❸.
3) Pull out the elevator cam ❹.

[Precautions on remounting]

- ○ Clean the surface of the pinch roller ass'y ❸ where the tape is attached.
- ○ Match up the ▯ marks on the elevator cam ❹ and cam gear, press ❺.

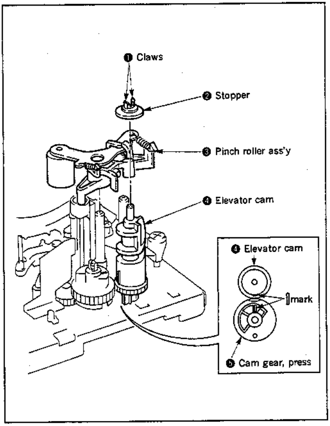

❶ Claws
❷ Stopper
❸ Pinch roller ass'y
❹ Elevator cam
❹ Elevator cam
▯mark
❺ Cam gear, press

Fig. 3-12.

3-7. CAM GEAR, PRESS AND TRANSMISSION GEAR (Fig. 3-13)

1) Remove the pinch roller ass'y. (Refer to 3-6.)
2) Remove the screw ❶, then remove the lid release plate ❷.
3) Remove the two claws ❸, then pull out the cam gear, press ❹.
4) Remove the washer 2 ❺, then pull out the transmission gear ❻.

[Precautions on remounting]

- ○ Check the top and bottom of the transmission gear ❻.
- ○ Match up the hole ❼ on the chassis with the hole ❼ on the cam gear, press ❹.
- ○ Match up the ▯ mark on the cam gear, press ❹ with the ▯ mark on the alleviator cam ❽.

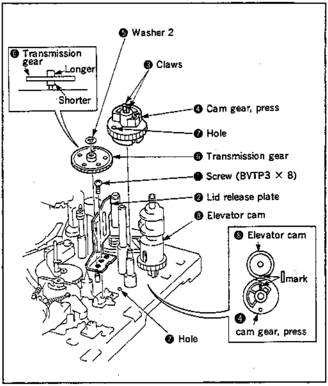

❺ Washer 2
❻ Transmission gear
Longer
Shorter
❸ Claws
❹ Cam gear, press
❼ Hole
❻ Transmission gear
❶ Screw (BVTP3 × 8)
❷ Lid release plate
❽ Elevator cam
❽ Elevator cam
▯mark
❹ cam gear, press
❼ Hole

Fig. 3-13.

3-8. RVS ARM ASS'Y AND RVS CAM GEAR (Fig. 3-14)

1) Remove the nylon nut M2 ❶ and plastic washer ❷.
2) Disengage the claw ❸, then pull out the RVS arm ass'y ❹.
3) Remove washer 2 ❺, then pull out the RVS cam gear ❻.

[Precautions on remounting]

- ○ The holes ❼ in the chassis and in the RVS cam gear ❻ must match up. Also, make sure to match up the holes ❾ on the cam gear, press ❽ and the chassis.
- ○ The spring ❿ must be hooked as shown in Fig. A below.
- ○ Clean the surface of the RVS arm ass'y ❹ where a tape is attached.
- ○ Apply 1/2 drop of lubricant to the shaft ⓫.

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

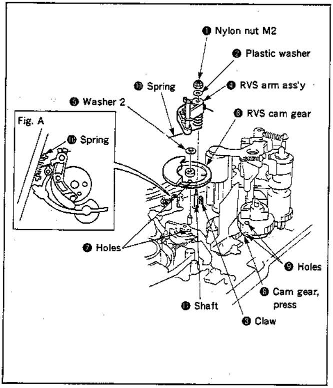

❶ Nylon nut M2
❷ Plastic washer
❿ Spring
❹ RVS arm ass'y
❺ Washer 2
❻ RVS cam gear
Fig. A
❿ Spring
❼ Holes
❾ Holes
❽ Cam gear, press
⓫ Shaft
❸ Claw

Fig. 3-14.

3-9. GUIDE No. 7 (Fig. 3-15)

1) Remove the nylon nut M3 ❶.
2) Pull out guide flange No. 7 ❷, guide sleeve No. 7 ❸, guide flange No. 7 ❹ and compression coil spring ❺ in the given order.

[Precautions on remounting]

- ○ Clean the surface of the guide sleeve No. 7 ❸ where the tape is attached.
- ○ Adjust the height of guide No. 7 to the height shown in Fig. A below.

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

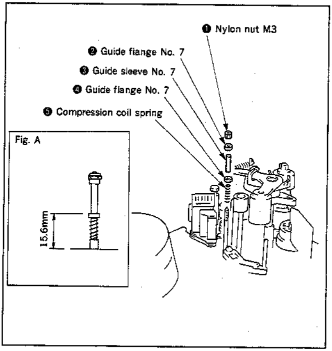

❶ Nylon nut M3
❷ Guide flange No. 7
❸ Guide sleeve No. 7
❹ Guide flange No. 7
❺ Compression coil spring
Fig. A
15.6mm

Fig. 3-15.

3-10. S-BRAKE ASS'Y, T-BRAKE ASS'Y (Fig. 3-16)

1) Remove the spring ❶.
2) Disengage the claw ❷, then pull out the S-brake ass'y ❸.
3) Disengage the claw ❹, then pull out the T-brake ass'y ❺.

[Precautions on remounting]

- ○ Do not touch the brake shoes for the respective S-brake ❸ and T-brake ❺ assy's directly with your fingers.
- ○ Do not hold on to the S-brake ❸ and T-brake ❺ assy's by the arms when inserting them.
- ○ The T-brake ass'y ❺ must be positioned above the S-brake ass'y ❸ as shown in Fig. A below.

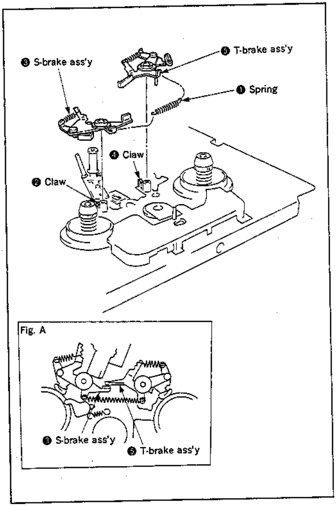

❸ S-brake ass'y
❺ T-brake ass'y
❶ Spring
❹ Claw
❷ Claw
Fig. A
❸ S-brake ass'y
❺ T-brake ass'y

Fig. 3-16.

3-11. T-SOFT BRAKE ASS'Y REV BRAKE ARM (Fig. 3-17)

1) Remove the end of the spring ❶ from the REV brake arm ❷.
2) Remove the end of the spring ❸ from the chassis.
3) Disengage the claw ❹, then pull out the T-soft brake ass'y ❺.
4) Disengage the claw ❻, then pull out the REV brake arm ❷.

[Precautions on remounting]

- ○ Do not touch the brake shoe of the T-soft brake ass'y ❺ directly with your fingers.

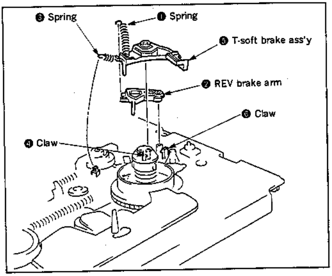

❸ Spring
❶ Spring
❺ T-soft brake ass'y
❷ REV brake arm
❻ Claw
❹ Claw

Fig. 3-17.

3-12. S-SOFT BRAKE ARM ASS'Y (Fig. 3-18)

1) Unhook the end of the spring ❶ from the chassis.
2) Disengage the claw ❷, then pull out the S-soft brake arm ass'y ❸.

[Precautions on remounting]

- ○ The S-soft brake arm ass'y must not clamp down the tension regulator band ass'y ❹ nor be positioned below the tension regulator band ❹.

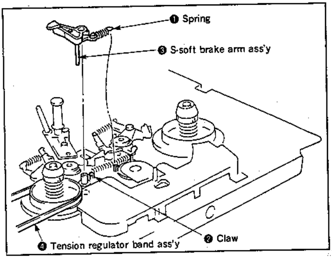

❶ Spring
❸ S-soft brake arm ass'y
❹ Tension regulator band ass'y
❷ Claw

Fig. 3-18.

3-13. S-GUIDE AND T-GUIDE ROLLER ASSY'S (Fig. 3-19)

1) Loosen the setscrew ❶, then remove the S-guide roller ass'y ❷ by turning it in the direction of the arrow Ⓐ.
2) Loosen the setscrew ❸, then remove the T-guide roller ass'y ❹ by turning it in the direction of arrow Ⓑ.

[Precautions on remounting]

○ Clean the surfaces of the S-guide roller ❷ and T-guide roller assy's ❹ where a tape is attached.

[Adjustment after replacement]

○ Perform tape path adjustments as described in 4-1.

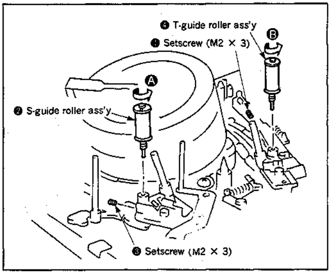

❹ T-guide roller ass'y
❶ Setscrew (M2 × 3)
Ⓑ
Ⓐ
❷ S-guide roller ass'y
❸ Setscrew (M2 × 3)

Fig. 3-19.

3-14. REEL LOCK RELEASE AND REW GEAR (Fig. 3-20)

1) Disengage the two claws ❶, then remove the reel lock release ❷ along with the spring ❸ (while the spring is still attached).
2) Next, pull out the REW gear ❹ with the spring bearing ❺ still attached).

[Precautions on remounting]

○ Make sure that the small thrust bearing ❻ remains attached.

○ Make sure that the two claws ❶ lock the real lock release ❷ in place.

○ Apply 1/2 drop of lubricant to the shaft ❼.

○ Make sure that the spring ❸ adheres to the reel lock release ❷ and that it fits inside the rib of the REW gear ❹.

○ Mount the REW gear ❹ by meshing it with gear ❽.

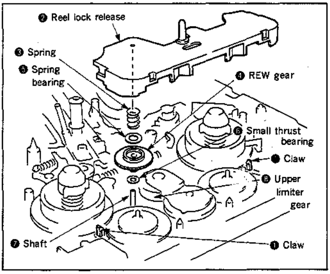

❷ Reel lock release
❸ Spring
❺ Spring bearing
❹ REW gear
❻ Small thrust bearing
❶ Claw
❽ Upper limiter gear
❼ Shaft
❶ Claw

Fig. 3-20.

3-15. TENSION REGULATOR ARM ASS'Y, TENSION REGULATOR BAND ASS'Y (Fig. 3-21)

1) Remove the reel lock release ass'y. (Refer to Fig. 3-14.)
2) Disengage the three claws marked ❶ and the claw marked ❷, then remove the tension regulator band ass'y ❸.
3) Unhook the end of the spring ❹ from the chassis.
4) Disengage the claw ❺, then pull out the tension regulator arm ass'y ❻.

[Precautions on remounting]

- ○ Roll up the tension regulator band ❸ on the S-reel by turning the S-soft brake arm ass'y ❼ in the direction of the arrow.
- ○ Hook the spring ❹ at the center of the spring hook ❽.
- ○ Do not touch the brake shoe of the tension regulator band ass'y ❸ directly with your fingers.
- ○ Mount the tension regulator arm ass'y ❻ at the position shown in Fig. A below.

[Adjustment after replacement]

- ○ Check the back tension. (Refer to 4-1-1.)
- ○ Perform tape path adjustments as described in 4-1.

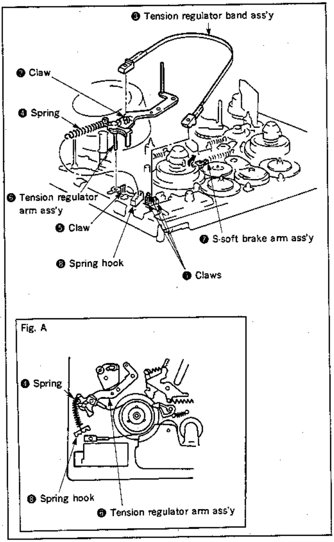

❸ Tension regulator band ass'y
❷ Claw
❹ Spring
❻ Tension regulator arm ass'y
❺ Claw
❽ Spring hook
❼ S-soft brake arm ass'y
❶ Claws
Fig. A
❹ Spring
❽ Spring hook
❻ Tension regulator arm ass'y

Fig. 3-21.

3-16. S TAKE-UP ASS'Y (Fig. 3-22)

1) Remove the tension regulator arm ass'y and the tension regulator band ass'y. (Refer to 3-15.)
2) Unhook the end of the spring ❶ from the S take-up arm ❷.
3) Disengage the two claws ❸, then remove the S take-up ass'y ❹.

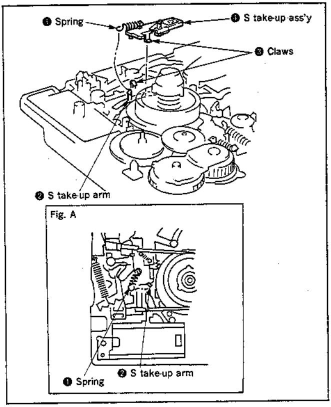

❶ Spring
❹ S take-up ass'y
❸ Claws
❷ S take-up arm
Fig. A
❷ S take-up arm
❶ Spring

Fig. 3-22.

3-17. S-REEL ASS'Y (Fig. 3-23)

1) Remove the S-soft brake arm ass'y. (Refer to 3-12.)
2) Remove the reel lock release. (Refer to 3-14.)
3) Remove the tension regulator band ass'y. (Refer to 3-15.)
4) Turn the S-brake ass'y ❶ in the direction of the arrow.
5) Pull out the S-reel ass'y ❷.

[Precautions on remounting]

- At least one reel stand thrust bearing ❸ must be attached (but not more than two).
- Do not touch the outer edge of the S-reel ass'y ❷ directly with your fingers.
- Apply 1/2 drop of lubricant over the shaft ❹.
- Mount the S-reel ass'y ❷ while meshing it with the relay gear ❺.

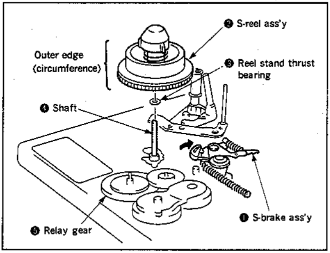

❷ S-reel ass'y
Outer edge (circumference)
❸ Reel stand thrust bearing
❹ Shaft
❶ S-brake ass'y
❺ Relay gear

Fig. 3-23.

3-18. T-REEL ASS'Y (Fig. 3-24)

1) Remove the T-soft brake ass'y. (Refer to 3-11.)
2) Remove the reel lock release ass'y. (Refer to 3-14.)
3) Turn the T-brake ass'y ❶ in the direction of the arrow.
4) Pull out the T-reel ass'y ❷.

[Precautions on remounting]

- At least one reel stand thrust bearing ❸ must be attached (but not more than two).
- Do not touch the outer edge of the T-reel ass'y ❷ directly with your fingers.
- Apply 1/2 drop of lubricant on the shaft ❹.
- Mount the T-reel ass'y ❷ while meshing it with the relay gear ❺.

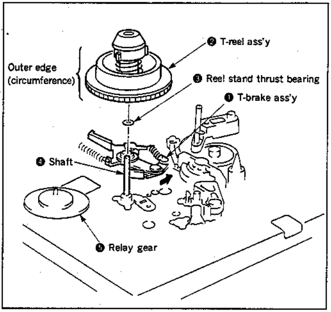

❷ T-reel ass'y
Outer edge (circumference)
❸ Reel stand thrust bearing
❶ T-brake ass'y
❹ Shaft
❺ Relay gear

Fig. 3-24.

3-19. PENDULUM ARM ASS'Y (Fig. 3-25)

1) Remove the reel lock release ass'y. (Refer to 3-14.)
2) Remove the washer 2 ❶, then pull out the pendulum arm ass'y ❷.

[Precautions on remounting]

- Fit the boss on the pendulum cap ❸ into the gap in the pendulum slide plate ❹.
- The plastic slider ❺ must be attached.
- Apply 1/2 drop of lubricant on the shaft ❻.
- Mount the pendulum arm ass'y ❷ by meshing it with the upper limiter gear ❼.

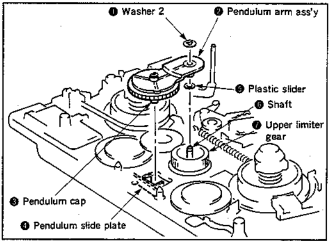

❶ Washer 2
❷ Pendulum arm ass'y
❺ Plastic slider
❻ Shaft
❼ Upper limiter gear
❸ Pendulum cap
❹ Pendulum slide plate

Fig. 3-25.

3-20. RELAY GEAR (Fig. 3-26)

1) Remove the reel lock release and REW gear. (Refer to 3-14.)
2) Remove the S-reel ass'y. (Refer to 3-17.)
3) Remove the T-reel ass'y. (Refer to 3-18).
4) Pull out the two relay gears ❶.

[Precautions on remounting]

- ○ The relay gears ❶ must rotate smoothly after remounting.
- ○ Apply 1/2 drop of lubricant to the respective shafts ❷.

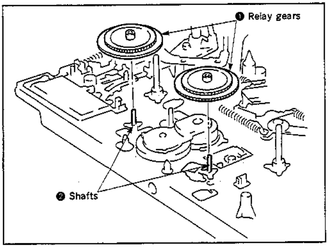

❶ Relay gears
❷ Shafts

Fig. 3-26.

3-21. ADJUSTER ARM ASS'Y (Fig. 3-27)

1) Remove screw ❶.
2) Remove washer ❻.
3) Remove the end of the spring ❷ hooked to the chassis.
4) Remove the end of the timing belt ❸ from the capstan motor arm ass'y.
5) Disengage the claw ❹, then remove the adjuster arm ass'y.

[Precautions on remounting]

- ○ First mount the adjuster arm ass'y ❺, timing belt ❸ and spring ❷, then attach the washer ❻ and fasten the screw ❶.
- ○ The screw fastening torque must be within 5kg•cm (±1kg•cm).

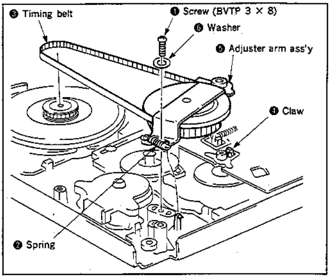

❸ Timing belt
❶ Screw (BVTP 3 × 8)
❻ Washer
❺ Adjuster arm ass'y
❹ Claw
❷ Spring

Fig. 3-27.

3-22. CAP BRAKE ASS'Y (Fig. 3-28)

1) Loosen the screw ❶, then push the timing belt ❷ in the direction of the arrow.
2) Unhook the end of the spring ❸ from the chassis.
3) Disengage claw ❹, then pull out CAP brake ass'y ❺.

[Precautions on remounting]

- ○ Do not touch the brake shoe of the CAP brake ass'y ❺ directly with your fingers.

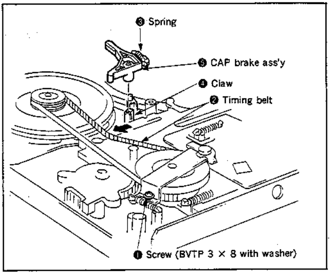

❸ Spring
❺ CAP brake ass'y
❹ Claw
❷ Timing belt
❶ Screw (BVTP 3 × 8 with washer)

Fig. 3-28.

3-23. CAPSTAN MOTOR (Fig. 3-29)

1) Turn the ACE ass'y ❶ in the direction of arrow Ⓐ as shown in Fig. A below, then remove three screws ❷.
2) Remove screw ❸, then remove the rotor clamp ❹.
3) Turn the CAP brake ass'y ❺ in the direction of arrow Ⓑ, then pull out the capstan motor ❻.

[Precautions on remounting]

○ Clean the section of the capstan motor ❻ where the tape is attached.

○ Do not touch the brake shoe of the CAP brake ass'y ❺ directly with your fingers.

○ Of the three screws ❷, first fasten screw A temporarily, then fasten screws B and C firmly, followed by screw A.

○ The screw fastening torque must be within 3kg•cm ± 1kg•cm.

[Adjustments after mounting]

○ Perform tape path adjustments as described in 4-1.

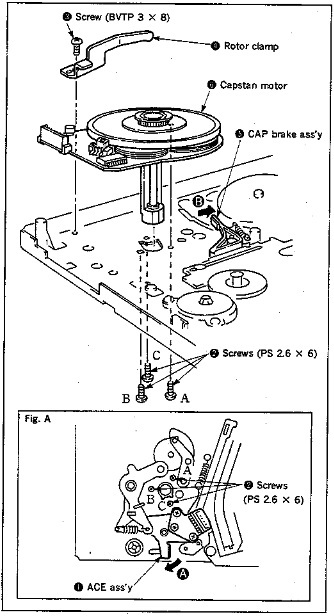

❸ Screw (BVTP 3 × 8)
❹ Rotor clamp
❻ Capstan motor
❺ CAP brake ass'y
Ⓑ
C
❷ Screws (PS 2.6 × 6)
B
A
Fig. A
A
B
C
❷ Screws
(PS 2.6 × 6)
❶ ACE ass'y
Ⓐ

Fig. 3-29.

3-24. ROTARY SWITCH (Fig. 3-30)

1) Remove the adjuster arm ass'y. (Refer to 3-21.)
2) Remove the screws ❶ and ❷, then pull out the rotary switch ❸.

[Precautions on remounting]

○ Match up the ● mark on the rotary switch ❸ with the ▲ mark on the RKB cam gear ❹ as shown in Fig. A.

○ Match up holes ❻ on the pendulum arm ❺ and the chassis.

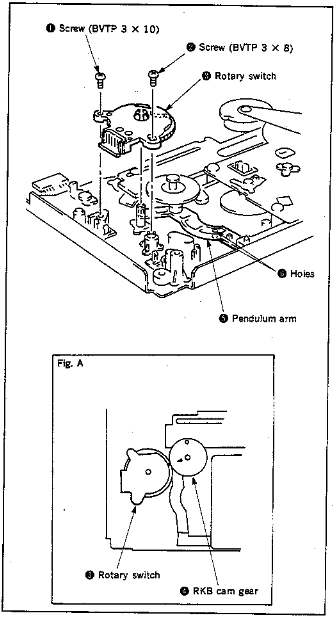

❶ Screw (BVTP 3 × 10)
❷ Screw (BVTP 3 × 8)
❸ Rotary switch
❻ Holes
❺ Pendulum arm
Fig. A
❸ Rotary switch
❹ RKB cam gear

Fig. 3-30.

3-25. RKB CAM GEAR (Fig. 3-31)

1) Remove the adjuster arm ass'y. (Refer to 3-22.)
2) Remove washer 2 ❶, then pull out the RKB cam gear ❷.

[Precautions on remounting]

- ○ When the limiter arm ❸ is pushed in the direction of the arrow, the pin must fit into the notch on the RKB cam gear ❷.
- ○ The ■ mark on rotary switch ❺ must match up with the ◀ mark on the RKB cam gear ❷ as shown in Fig. A.
- ○ Apply 1/2 drop of lubricant to shaft ❻.
- ○ Match up the holes ❹ on the RKB cam gear ❷ and the mode slide plate.

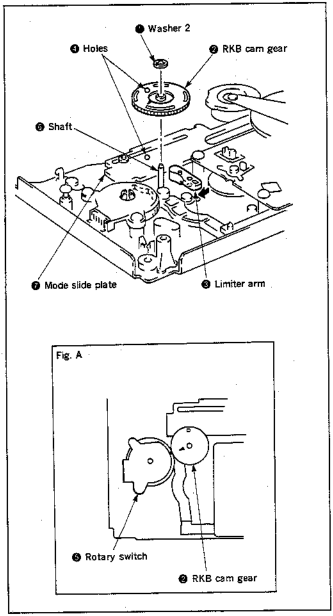

❶ Washer 2
❹ Holes
❷ RKB cam gear
❻ Shaft
❼ Mode slide plate
❸ Limiter arm
Fig. A
❺ Rotary switch
❷ RKB cam gear

Fig. 3-31.

3-26. SUB-CHASSIS ASS'Y (Fig. 3-32)

1) Remove the reel lock release arm and REW gear. (Refer to 3-15.)
2) Remove the pendulum arm ass'y. (Refer to 3-19.)
3) Remove the adjuster arm ass'y. (Refer to 3-22.)
4) Remove the three screws ❶, then remove sub-chassis ass'y ❷.

[Precautions on remounting]

- ○ The switching arm ❸ must be switched in the direction of the arrow.
- ○ The screws must be fastened in order of a, b and c.
- ○ Mount the sub-chassis carefully so as not to damage the gear.
- ○ The corner edge of the lug terminal ❹ must fit into the gap between the chassis ass'y ❷ and mechanism chassis.

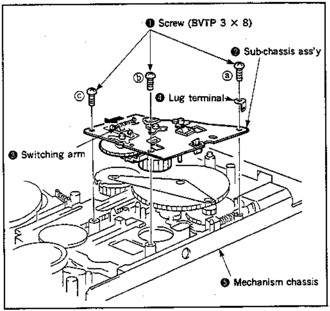

❶ Screw (BVTP 3 × 8)
❷ Sub-chassis ass'y
ⓐ
ⓑ
ⓒ
❹ Lug terminal
❸ Switching arm
❺ Mechanism chassis

Fig. 3-32.

3-27. PENDULUM SLIDE PLATE, PENDULUM ARM (Fig. 3-33)

1) Remove the rotary switch. (Refer to 3-24.)
2) Remove the RKB cam gear. (Refer to 3-25.)
3) Remove the sub-chassis ass'y. (Refer to 3-26.)
4) Disengage the two claws ❶, then pull out the pendulum slide plate ❷.
5) Unhook the spring ❸.
6) Disengage the claw ❹, then pull out pendulum arm ❺.

[Precautions on remounting]

○ The shaft ❻ must fit into hole ❼.

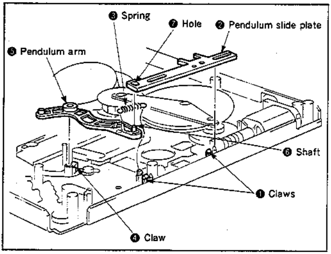

❸ Spring
❼ Hole
❷ Pendulum slide plate
❺ Pendulum arm
❻ Shaft
❶ Claws
❹ Claw

Fig. 3-33.

3-28. THE LIMITER ARM AND LIMITER SLIDE PLATE (Fig. 3-24)

1) Remove the RKB cam gear. (Refer to 3-25.)
2) Remove the sub-chassis. (Refer to Fig. 3-26.)
3) Disengage the claw ❶, then pull out the limiter arm ❷.
4) Disengage the two claws ❸, then pull out the limiter slide plate ❹.

[Precautions on remounting]

○ The shaft ❺ must fit into the hole ❻.

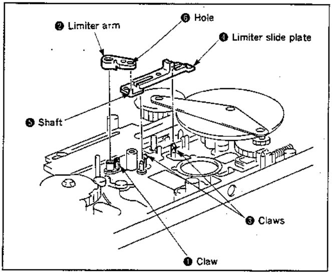

❷ Limiter arm
❻ Hole
❹ Limiter slide plate
❺ Shaft
❸ Claws
❶ Claw

Fig. 3-34.

3-29. CAM MOTOR (Fig. 3-35)

1) Remove the sub- chassis ass'y. (Refer to 3-26.)
2) Disengage the six claws ❶, then remove the cam motor ❷ and worm gear ❸.

[Precautions on remounting]

○ Check the meshing of cam motor ❷ and worm gear ❸.

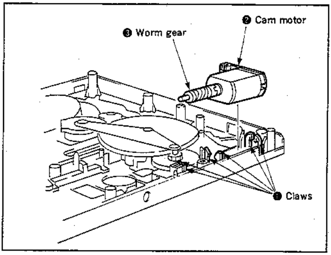

❷ Cam motor
❸ Worm gear
❶ Claws

Fig. 3-35.

3-30. CAM GEAR (Fig. 3-36)

1) Remove the three washers 2 ❶, then pull out the cam gear holder ❷.
2) Pull out the cam gear ❸.

[Precautions on remounting]

○ Match up the right loading gear ass'y, the tension regulator arm, the S take-up arm, the work wheel, the brake arm and the mode slide plate with respective holes ❹ to ❾ on the chassis in that order.

○ Match up the hole ❿ on the mode slide plate with the hole ❿ in cam gear ❸.

○ Apply 1/2 drop of lubricant to the shaft ⓫.

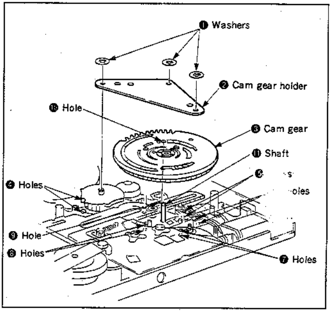

❶ Washers
❷ Cam gear holder
❿ Hole
❸ Cam gear
⓫ Shaft
❺ s
oles
❹ Holes
❾ Hole
❽ Holes
❼ Holes

Fig. 3-36.

3-31. TENSION REGULATOR ARM, S TAKE-UP ARM (Fig. 3-37)

1) Remove the cam gear. (Refer to 3-30)
2) Disengage the claw ❶, then remove the tension regulator arm ❷.
3) Remove the end of the spring ❸ from the S take-up arm ❹.
4) Disengage the claw ❺, then pull out S take-up arm ❹.

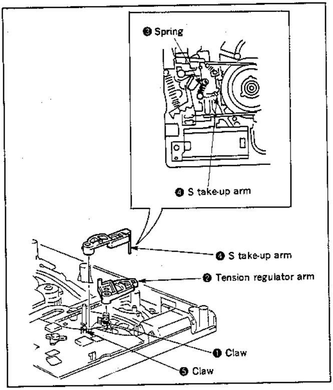

❸ Spring
❹ S take-up arm
❹ S take-up arm
❷ Tension regulator arm
❶ Claw
❺ Claw

Fig. 3-37.

3-32. MODE SLIDE PLATE, RVS RELAY GEAR (Fig. 3-38)

1) Remove the RKB cam gear. (Refer to 3-25.)
2) Remove the cam gear. (Refer to 3-30.)
3) Remove the two washers 2 ❶.
4) Turn the CAP brake ❷ in the direction of the arrow, then pull out mode slide plate ❸.
5) Pull out the RVS relay gear ❹.

[Precautions on remounting]

- Match up the hole ❺ on the RVS relay gear ❹ with hole ❺ in the chassis.
- Match up the holes ❻ on the mode slide plate ❸ with holes ❻ in the chassis.
- Apply 1/2 drop of lubricant to the shaft ❼.

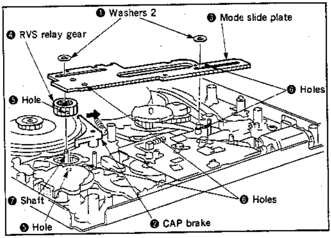

❶ Washers 2
❸ Mode slide plate
❹ RVS relay gear
❻ Holes
❺ Hole
❻ Holes
❼ Shaft
❺ Hole
❷ CAP brake

Fig. 3-38.

3-33. BRAKE ARM, BRAKE SLIDE PLATE (Fig. 3-39)

1) Remove the sub-chassis. (Refer to 3-26.)
2) Remove the cam gear. (Refer to 3-30.)
3) Disengage the claw ❶, then pull out the brake arm ❷.
4) Disengage the two claws ❸, then pull out the brake slide plate ❹.

[Precautions on remounting]

- Insert the shaft ❺ into hole ❻.

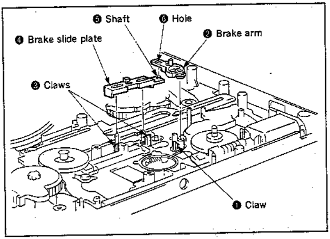

❺ Shaft
❻ Hole
❷ Brake arm
❹ Brake slide plate
❸ Claws
❶ Claw

Fig. 3-39.

3-34. RIGHT SHUTTLE, RIGHT LOADING GEAR ASSY'S (Fig. 3-40)

1) Remove the mode slide plate. (Refer to 3-32.)
2) Remove the plastic slider ❶, then pull out the right shuttle ass'y ❷.
3) Pull out the right loading gear ass'y ❸.

[Precautions on remounting]

- ○ Match up the ▲ mark on the right loading gear ass'y ❸ with the ▲ mark on the left loading gear ass'y ❹ as shown in Fig. A below.
- ○ Apply 1/2 drop of lubricant to the shaft ❺.
- ○ Do not hold on to the arm when pressing on the right loading gear ❸.
- ○ Clean the section of the right shuttle ass'y ❷ where the tape is attached.

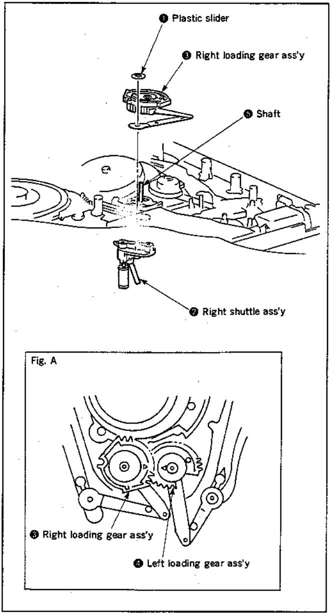

❶ Plastic slider
❸ Right loading gear ass'y
❺ Shaft
❷ Right shuttle ass'y
Fig. A
❸ Right loading gear ass'y
❹ Left loading gear ass'y

Fig. 3-40.

3-35. LEFT SHUTTLE ASS'Y, LEFT LOADING GEAR ASS'Y (Fig. 3-41)

1) Remove the right shuttle ass'y and right loading gear ass'y. (Refer to 3-34.)
2) Remove the plastic slider ❶, then pull out the left shuttle ass'y ❷.
3) Remove washer 2 ❸, then pull out the left loading gear ass'y ❹.

[Precautions on remounting]

- ○ Apply 1/2 drop of lubricant to shaft ❺.
- ○ The tension regulator arm ass'y ❻ and left shuttle ass'y ❷ must be positioned as shown in Fig. A below.
- ○ Do not hold on to the arm of the left loading gear ass'y ❹ when the left loading gear ass'y ❹ is pressed.
- ○ Clean the section of the felt shuttle ass'y ❷ where the tape is attached.

[Adjustments after replacement]

- ○ Perform tape path adjustments as described in 4-1.

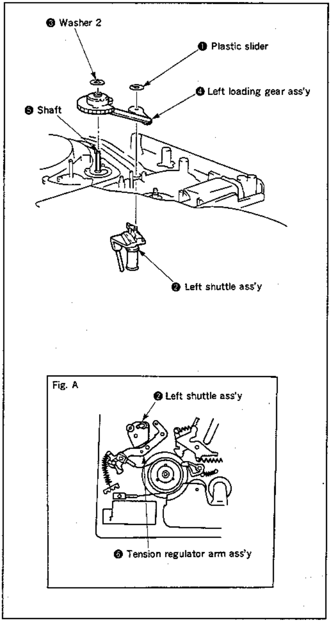

❸ Washer 2
❶ Plastic slider
❹ Left loading gear ass'y
❺ Shaft
❷ Left shuttle ass'y
Fig. A
❷ Left shuttle ass'y
❻ Tension regulator arm ass'y

Fig. 3-41.

3-36. C-ROLLER ARM ASS'Y, C-ROLLER RELEASE LEVER (Fig. 3-42)

1) Disengage the claw ❶, then pull out the C-roller arm ass'y ❷.
2) Unhook the end of the spring ❸ from the chassis.
3) Disengage the two claws ❹, then pull out the C-roller release lever ❺.

[Precautions on remounting]

○ Mount C-roller arm ass'y ❷ so that the hole ❻ on the C-roller arm ass'y ❷ fits into the boss ❼ on the C-roller release lever ❺.

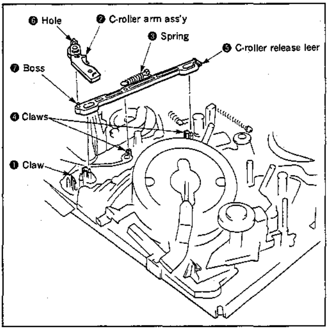

❻ Hole
❷ C-roller arm ass'y
❸ Spring
❺ C-roller release leer
❼ Boss
❹ Claws
❶ Claw

Fig. 3-42.

4. ADJUSTMENT

4-1. TAPE PATH ADJUSTMENT

The "Tape path" refers to the route of the tape from the supply reel disk to the take-up reel disc via the video heads. Each component part of the tape transport system, particularly the surface of parts which make direct contact with the tape must always be kept clean, free of dust, oil, scratches and so forth.

The tape path system is factory preadjusted. when parts of the tape transport system are replaced, be sure to make the required adjustments as precisely as possible in order to ensure stable tape transport.

4-1-1. Tension regulator position/tension adjustment (Fig. 4-1.)

Purpose: Stabilizes contact of the video head and the tape to maintain the tension of the tape so that it feeds at a constant level.

- **Position adjustment**

Mode	Threading is completed without a cassette loaded. (Refer to section 1-2.)
Adjustment locations	Tension band holder

[Adjustment method]

1) Allow the unit to go through the threading procedure without a cassette loaded.
2) Set the VTR unit to playback, then turn the tension band adjuster lever so that the gap between guide No. 0 and tension arm is within 4.5±0.4mm. *(Set the unit to playback without a cassette loaded.)
3) After adjustment, go through the loading procedure once more without a cassette loaded, then check the position of the tension arm.

- **Tension adjustment**

Mode	Playback
Measuring instrument/tool	Torque cassette
Adjustment locations	Position for hooking the tension spring
Specification	28 to 34 g•cm

[Adjustment method]

1) Playback the torque cassette.
2) Check that the center value deviation reading on the torque cassette meets with the standards.
3) When the reading is higher than the standards: Move the spring toward direction Ⓐ.
   When the reading is less than the standards: Move the spring toward direction Ⓑ.

Note: Move the spring to the tension spring hook position and recheck the tension arm position. If the arm position is misaligned, adjust the position and tension of the tension arm.

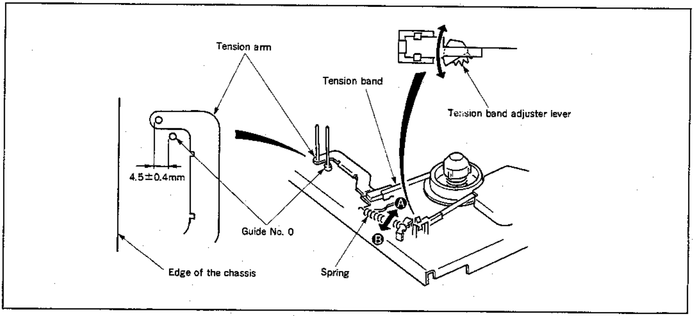


Fig. 4-1.

4-1-2. Height adjustment of the guide roller No. 2 (Fig. 4-2)

Mode	Playback
Tool	Blank tape
Adjustment locations	Guide roller height adjuster screw

[Adjustment method]

1) Load a new tape in the unit, then play it back.
2) Make sure that the lower flange of guide roller No. 2 does not curl up.
3) When the tape curls up: Turn the guide roller adjuster screw clockwise.
When the tape does not fit into the lower flange: Turn the guide roller adjuster screw counter-clockwise.
4) After the above check, separate the tension arm from the tape, then re-attach it slowly. At this time, check if the tape curls up at the lower flange of the guide roller No. 2 and if the curl disappears within 2 seconds.
5) If curl does not disappear in two seconds: Turn the adjuster screw clockwise.
If the tape does not curl up: Turn the adjuster screw counter-clockwise.

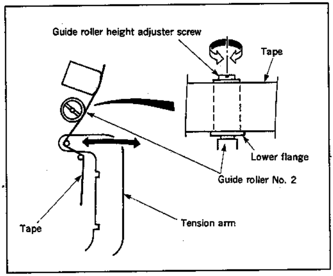


Fig. 4-2.

4-1-3. Height adjustment of guide roller No. 7 and the RVS arm (Fig. 4-3.)

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut

[Adjustment method]

1) Load the tape into the VTR and play it back, then adjust the height of the guide roller No. 7 so that the tape runs along the lower flange of guide roller No. 7.
2) If the guide roller is too low: Turn the height adjuster nut counter-clockwise.
If the guide roller is too high: Turn the height adjuster nut clockwise.
3) Run the tape in REV, then adjust the height of the RVS arm so that the tape runs along guide roller No. 7.
4) If the tape gets caught in the upper flange of guide roller No. 7: Turn the RVS arm height adjuster nut clockwise.
5) If the tape catches on the lower flange of guide roller No. 7 : Turn the RVS arm height adjuster nut counter-clockwise.

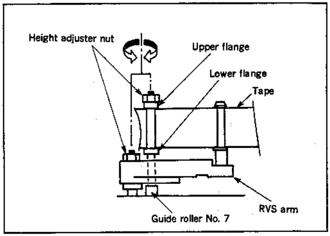


Fig. 4-3.

4-1-4. Height adjustment of guide rollers No. 3 and No. 6 (Fig. 4-4)

Mode	Playback
Signal	Hi-Fi alignment tape (Hi-Fi 400Hz)
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller height adjuster screw.

[Adjustment method]

1) Tracking (playback) : Turn off the auto tracking, then press the tracking buttons ▽ and △ simultaneously to set the tracking at the center position.
(If adjustment is made after the drum is replaced, the tracking must be set at the max. Rf output position.)
2) Height adjuster screw: Even out the RF output waveforms.
3) Press the tracking buttons (playback), ▽ and △ alternately.
4) Check that RF output drops the same amount at the front and rear edges.

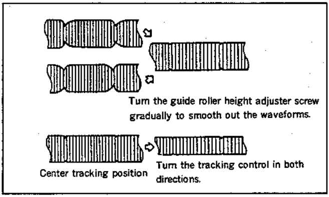

Turn the guide roller height adjuster screw gradually to smooth out the waveforms.
Center tracking position
Turn the tracking control in both directions.

Fig. 4-4.

4-1-5. ACE head ass'y adjustment (rough adjustment) (Figs. 4-5 and 4-6)

Purpose : Allows the tape to make even contact with the head for recording and playback of the specified track.

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut, tilt adjuster screw

[Adjustment method]

1) Mount the ACE head ass'y. At this time, adjust the height so that the height of guide flange No. 7 matches the level of the lower edge of the control head.
2) Remove the adjustment tool and load a new tape, then set the unit for playback.
3) Check that the tape does not curl or raise up noticeably near the ACE head.
4) If the yape curls up or rarises noticeably, readjust the tilt adjuster screw, the azimuth adjuster screw and the height adjuster nut.
(The height of the ACE head should be adjusted so that the lower edge of the tape is approx. 0.1 to 0.15 mm from the control head.)
5) Perform precision adjustment.

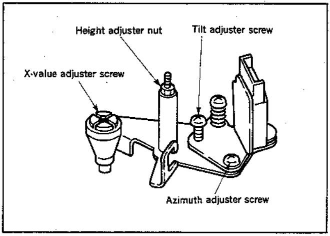

Height adjuster nut
Tilt adjuster screw
X-value adjuster screw
Azimuth adjuster screw

Fig. 4-5.

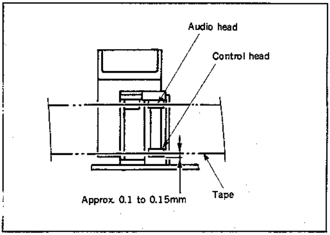

Audio head
Control head
Approx. 0.1 to 0.15mm
Tape

Fig. 4-6.

4-1-6. ACE head assembly adjustment (precision adjustment)

Mode	Playback
Signal	Alignment tape (JVC-MH-1 1KHz)
Measuring instrument	Oscilloscope
Measuring point	Audio output terminal
Adjustment locations	Azimuth adjuster screw Height adjuster nut Tilt adjuster screw

[Adjustment method]

1) Adjust the tilt adjuster screw in the FWD or REV mode so that the lower flange of guide No. 7 does not curl up or raise.
2) Alternately adjust the azimuth adjuster screw, the height adjuster nut, and the tilt adjuster screw to maintain even audio output at maximum with minimum deviation.

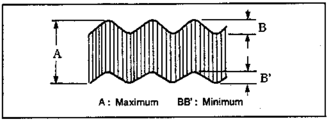

A
B
B'
A : Maximum
BB' : Minimum

Fig. 4-7.

4-1-7. X-value adjustment

Purpose : To obtain compatibility with other VTR.

Precaution : Be sure to perform the preset tracking adjustment before perform this adjustment. (Refer to the Service Guide.)
Turn off the auto tracking and set the VTR for manual tracking mode.

Mode	Playbadk
Signal	Hi-Fi alignment tape (Hi-Fi 400Hz), alignment tape (JVC-MH-1)
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check. (Check with the CHA head)
Adjustment locations	X-value adjuster screw

[Adjustment method]

- **Adjustment by Hi-Fi alignment tape**

  When the tracking is set at the center position (by pressing the ▽ and △ keys simultaneously), adjust the RF output to maximum.

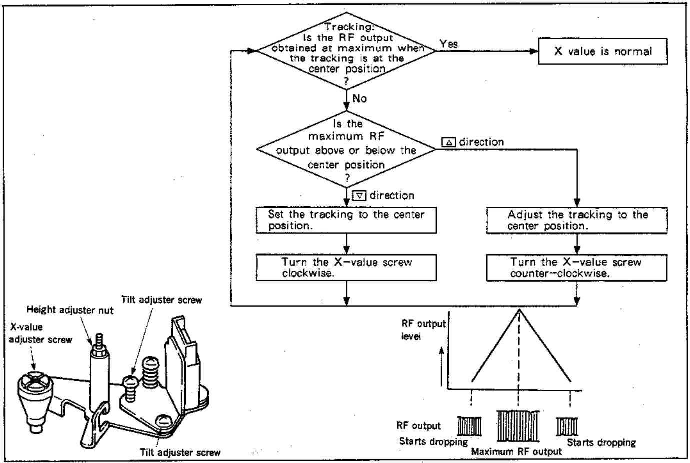

Tracking:
Is the RF output obtained at maximum when the tracking is at the center position ?
Yes
X value is normal
No
Is the maximum RF output above or below the center position ?
△ direction
▽ direction
Set the tracking to the center position.
Turn the X-value screw clockwise.
Adjust the tracking to the center position.
Turn the X-value screw counter-clockwise.
Tilt adjuster screw
Height adjuster nut
X-value adjuster screw
Tilt adjuster screw
RF output level
RF output
Starts dropping
Maximum RF output
Starts dropping

Fig. 4-8.

- **Adjustment by Alignment tape (JVC-MH-1)**
  Adjust the X-value adjuster screw so that maximum RF output is obtained and also that the RF output drops to the same position on pressing the respective ▽ and △ buttons while the tracking is set at the center position.

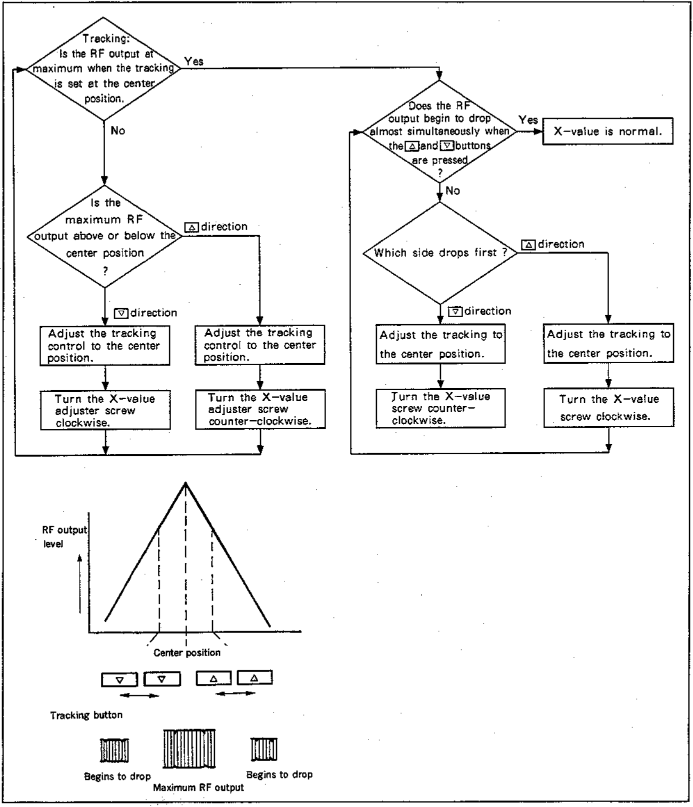
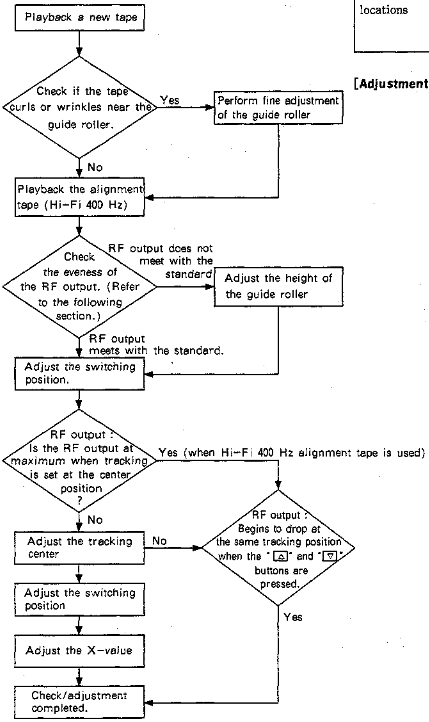

Tracking: Is the RF output at maximum when the tracking is set at the center position.
Yes
No
Is the maximum RF output above or below the center position ?
△ direction
▽ direction
Adjust the tracking control to the center position.
Turn the X-value adjuster screw clockwise.
Adjust the tracking control to the center position.
Turn the X-value adjuster screw counter-clockwise.
Does the RF output begin to drop almost simultaneously when the △ and ▽ buttons are pressed ?
Yes
X-value is normal.
No
Which side drops first ?
△ direction
▽ direction
Adjust the tracking to the center position.
Turn the X-value screw counter-clockwise.
Adjust the tracking to the center position.
Turn the X-value screw clockwise.
RF output level
Center position
▽
▽
△
△
Tracking button
Begins to drop
Maximum RF output
Begins to drop

Fig. 4-9.

4-1-8. Adjustments after replacing the drum (video head)

Purpose : Co-relative height, X-value and other factors of the drum will deviate from those of the guide roller. If the drum is replaced properly, these deviations are extremely small.

Precaution : Turn off the auto tracking and set the manual tracking mode.

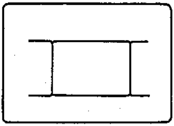

Playback a new tape
Check if the tape curls or wrinkles near the guide roller.
Yes
Perform fine adjustment of the guide roller
No
Playback the alignment tape (Hi-Fi 400 Hz)
Check the eveness of the RF output. (Refer to the following section.)
RF output does not meet with the standard
Adjust the height of the guide roller
RF output meets with the standard.
Adjust the switching position.
RF output : Is the RF output at maximum when tracking is set at the center position ?
Yes (when Hi-Fi 400 Hz alignment tape is used)
No
Adjust the tracking center
No
RF output : Begins to drop at the same tracking position when the "△" and "▽" buttons are pressed.
Yes
Adjust the switching position
Adjust the X-value
Check/adjustment completed.

Mode	Playback
Signal	Alignment tape (JVC-MH-1), blank tape
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller (refer to 4-1-5.) Switching position, Tracking preset, SP delay mono-multi, X-value (refer to 4-1-8) } (Refer to the Service Guide)

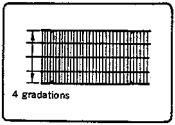
[Adjustment method]

[Checking the eveness and fluctuation of the RF output]

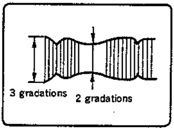
1) Set the RF output to the maximum level using the tracking buttons.



2) Perform fine adjustment of the voltage level range of the oscilloscope, then adjust the RF output deviation to within 4 gradations.



3) Press the tracking buttons and adjust the maximum amplitude of the RF output to within 3 gradations.
4) At this time, check if the minimum amplitude is more than 2 gradations.



5) Check that the RF output fluctuation between minimum and maximum levels is within 13%.

4-1-9. Checking the tension and torque

Purpose: To check that the tension, torque and compression force of the tape take-up section and mobile sections to ensure smooth tape run and achieve standard VTR performance.
If the tape transport is not smooth or problems occur in relation to the tape transport speed, perform the following check.

Mode	Each operation mode without loading a cassette tape. (Refer to section 1-3.)
Measuring instrument	Torque gauge, Torque gauge adapter

Item	VTR operation mode	Reel to be measured	Measurement value
Main brake torque	Stop	Supply and take-up reels	170g•cm or more
Review torque	Review	Supply reel	180±30g•cm (using the torque cassette)
Take-up torque	Playback	Take-up reel	80 to 140g•cm (using torque cassette)
Back tension torque	Rewind	Take-up reel	4 to 25 g•cm

[Check method]
Measure the torque using the torque gauge and torque gauge adaptor with the torque gauge fixed.

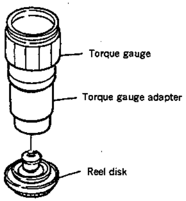


Fig. 4-13.

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